9TH EM QUALITY ASSURANCE CORPORATE BOARD MEETING

Table of Contents

9th EM QUALITY ASSURANCE CORPORATE BOARD MEETING

Meeting Location: ***U.S. Department of Energy – Oak Ridge, TN – Building 2714*** **Main Number: *(865) 576-0885***		
Room: *Large Conference Room*		
Agenda for February 16, 2011		
8:00-8:15 am	Agenda, Introductions, Status of Action Items from Last Board Meeting	Larry Perkins (EM-23)
8:15-8:30 am	Introduction/Opening Remarks	Robert Brown (ORO Deputy Manager)
8:30-9:30 am	Summary of EM Quality Assurance Program and EM Crosscutting QA Issues	Ken Picha (EM-20) Robert Murray (EM-23)
9:30-10:00 am	NQA-1 Accreditation Discussion	Bud Danielson (CNS)
10:00-10:15 am	**BREAK**	---
10:15-10:45 am	Focus Area #1 – (NQA-1 Suppliers) – Joint Supplier Evaluation Program	Mike Mason (BNI)
10:45–11:15 am	Focus Area #2 – (Commercial Grade Items and Services Dedication Implementation) – Commercial Grade Dedication Guidance Status Including Addition of Software	Dennis Weaver (BNI) Debbie Sparkman (CNS)
11:15-11:45 am	Focus Area #3 – (Design Quality Assurance)	Butch Huxford (EM-23)
11:45-12:45	**Lunch**	---
12:45-1:15 pm	Focus Area #4 – (Grading QA for D&D Projects)	Brenda Hawks (ORO)
1:15-1:45 pm	Training Academy Path Forward and Agreement on Scope	TJ Jackson (EMCBC) Bob Murray (EM-23)
1:45-2:15 pm	Discussion on DOE Records Management and Applicability of NQA-1 (potential new focus area)	EMCBC Personnel
2:15-2:45 pm	EM Corporate QA Program: Oversight and Implementation	Bob Toro (EM-23)
2:45-3:00 pm	General Board Discussion	---
3:00 pm	**Meeting Adjourn**	**---**

9TH EM

QUALITY ASSURANCE

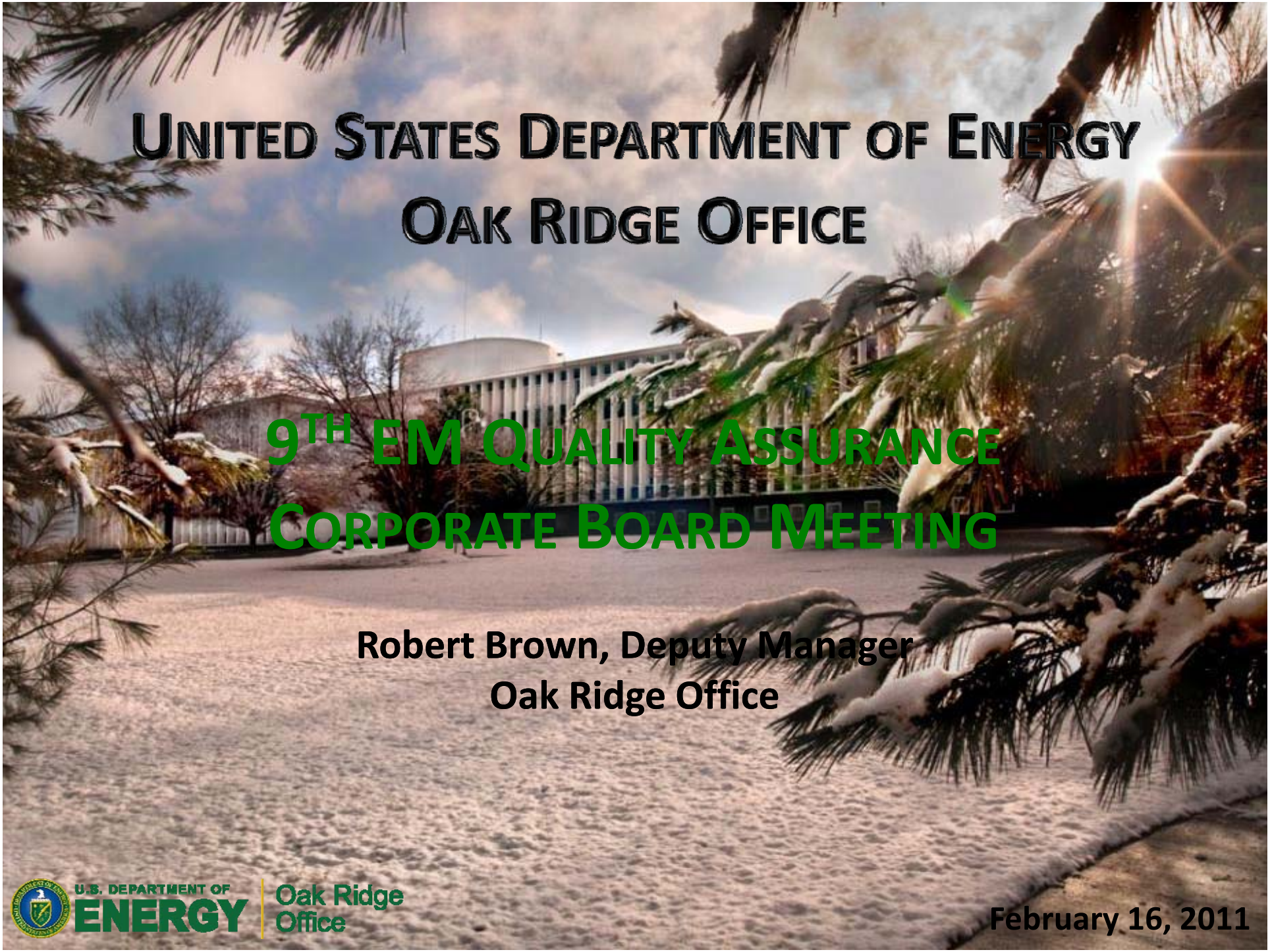
CORPORATE BOARD MEETING

Announcements

- Safety/Evacuation Information
- Logistics for badge requirements for Building 2714
- Refreshments and Restrooms
- Sign-in Sheet
- Presentations and referenced meeting materials are available online at the following website: http://www.em.doe.gov/Pages/QACorporateBoard.aspx
- Meeting minutes for the Corporate Board meeting will also be available at the following website: http://www.em.doe.gov/Pages/QACorporateBoard.aspx

Agenda

- Introduction/Opening Remarks – Robert Brown (ORO)
- Summary of previous action items for the Corporate Board
- Summary of EM QA Program and Crosscutting QA Issues - Ken Picha (EM-20) and Bob Murray (EM-23)
- NQA-1 Accreditation Discussion - Bud Danielson (CNS)
- Focus Area #1 (JSEP) – Mike Mason (BNI)
- Focus Area #2 (CGD) - Dennis Weaver (BNI)
- Focus Area #3 – (Design) - Butch Huxford (EM-23)
- Focus Area #4 (Grading) - Brenda Hawks (ORO)
- Training Academy Path Forward - TJ Jackson (EMCBC)
- DOE Records Management - EMCBC Personnel
- Overview of Assessment Strategy/Status - Bob Toro (EM-23)
- General Board Discussion



UNITED STATES DEPARTMENT OF ENERGY
OAK RIDGE OFFICE

9TH EM QUALITY ASSURANCE CORPORATE BOARD MEETING

Robert Brown, Deputy Manager
Oak Ridge Office

U.S. DEPARTMENT OF ENERGY | Oak Ridge Office

February 16, 2011

Key Oak Ridge Missions

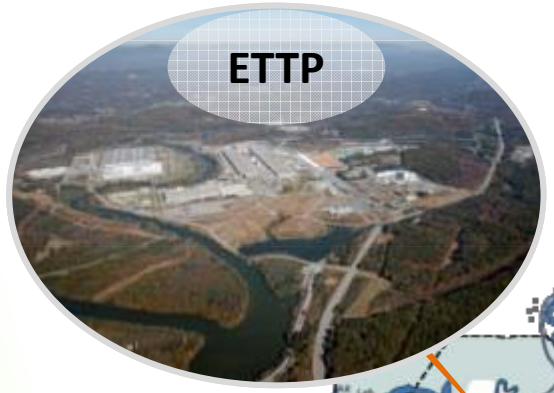
Oak Ridge Office

- Science and Technology
- Science Education
- Environmental Cleanup
- Energy & Nuclear Fuel Supply
- National Security
- Reindustrialization
- Technology Transfer & Economic Development

Integrated Support Center

- Support to SC Lab Sites
- Payment Center
- Other Site Support

A World Leading Research & Advanced Manufacturing Park



U.S. DEPARTMENT OF ENERGY | Oak Ridge Office

…with 33,725 acres, we have room to grow

DOE-OR Operating Contractors

Oak Ridge National Laboratory

UT-BATTELLE

Oak Ridge Institute for Science and Education

ORAU
OAK RIDGE ASSOCIATED UNIVERSITIES

Office of Scientific and Technical Information

INFORMATION INTERNATIONAL ASSOCIATES, INC. (IIA)

Y-12 National Security Complex

B&W Y-12
technical services L.L.C.

DOE-OR Operating Contractors

TRU Waste Processing Center

WAI
WASTREN ADVANTAGE, INC.

U-233 Disposition Project

ISOTEK Systems

Environmental Cleanup

BECHTEL JACOBS
Bechtel Jacobs Company LLC

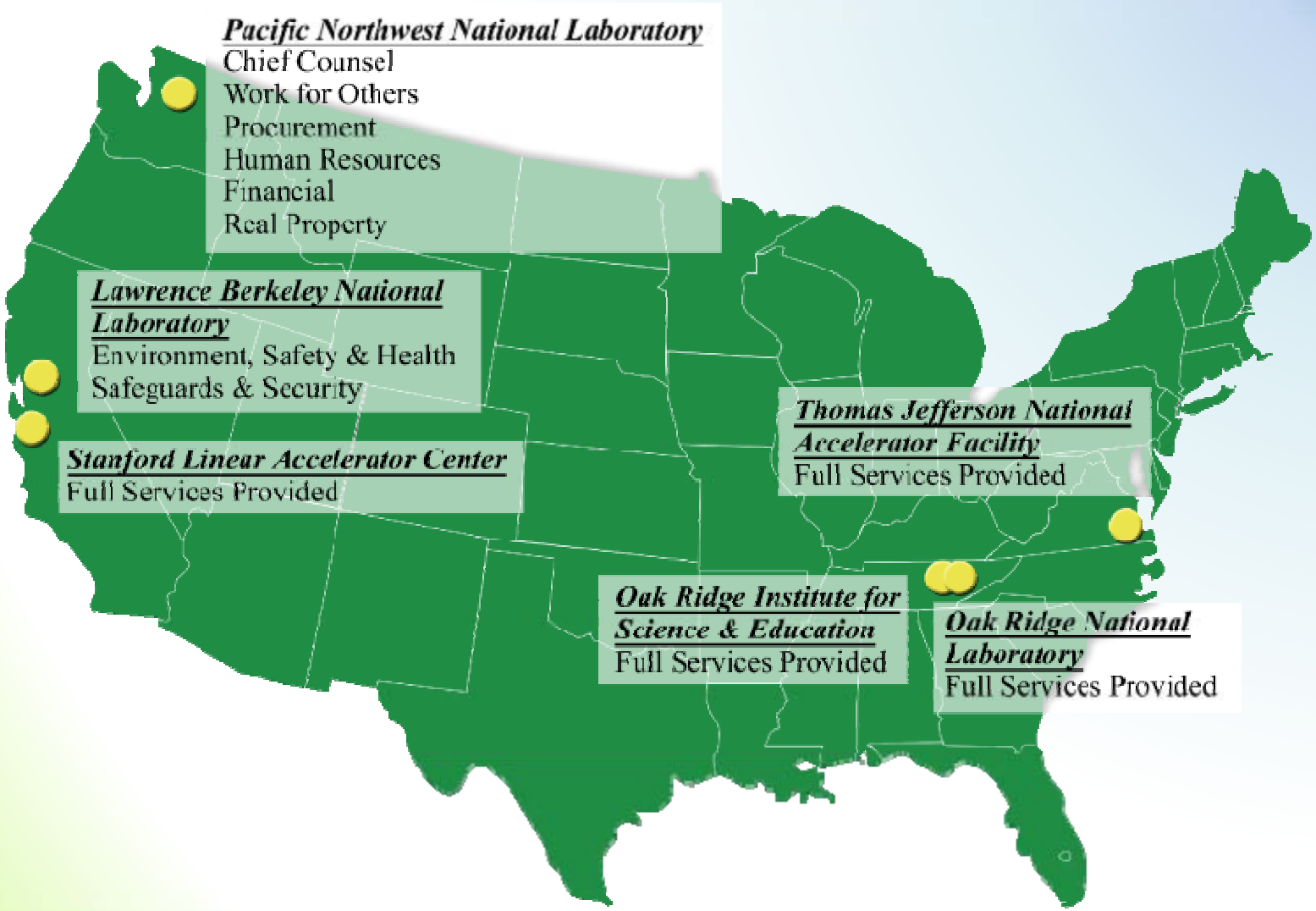
Uranium Enrichment/ Centrifuge Development

USEC
A Global Energy Company

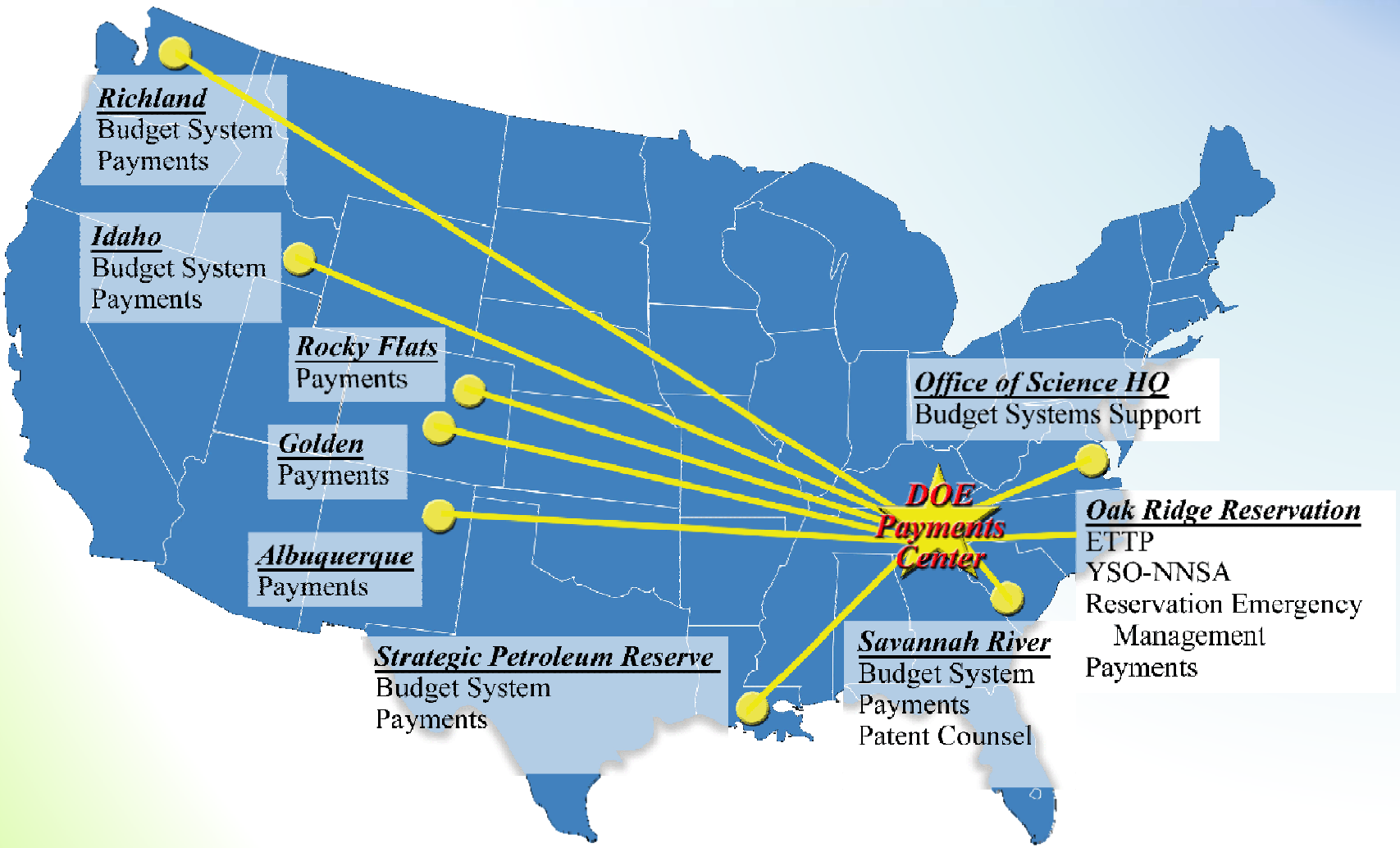
Security Services

WSI
Oak Ridge

ORO Support to Science Labs

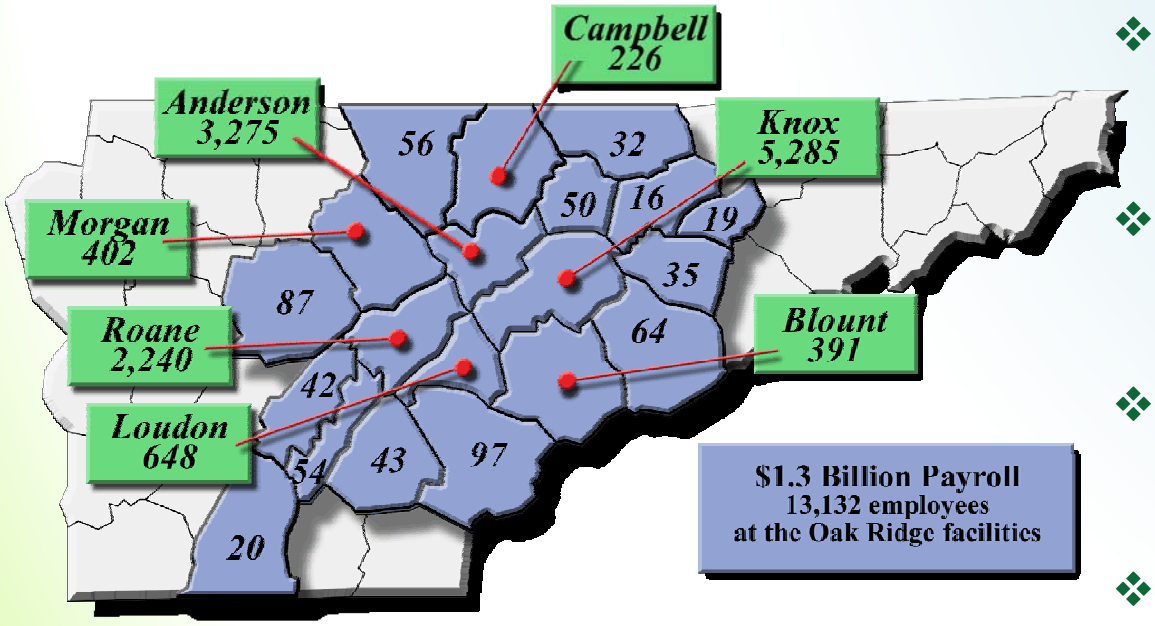


Payments Center Supports DOE Complex



Economic Impact of DOE Programs in Tennessee

Regional Impact



Misc. counties = 50

Statewide Impact

- $4.0 billion – increase in gross state product
- 62,000 – full-time jobs supported
- $90 million – state and local sales tax paid
- 4th – largest employer in the State of Tennessee

ORNL is DOE's Largest Multipurpose Science Laboratory

- $1.6 billion budget
- 4,900 employees
- 4,000 research guests annually
- $500 million invested in modernization
- Managing the billion-dollar U.S. ITER project

- Nation's largest concentration of materials research
- World's most intense pulsed neutron source and a world-class research reactor
- World's most powerful open scientific computing facility
- Nation's most diverse energy portfolio

U.S. DEPARTMENT OF ENERGY | Oak Ridge Office

Environmental Management

EM is an accelerated cleanup program underway to correct the legacies remaining from more than 50 years.

U.S. DEPARTMENT OF ENERGY

9th EM QA Corporate Board Meeting

Oak Ridge, TN

Summary of Corporate Board Action Items

Dr. Larry W. Perkins
Office of Standards and Quality Assurance (EM-23)

February 16, 2011

EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

EFCOG
Energy Facility Contractors Group

Status of Action Items

Action	Person	Status
Provide a revised lesson learned document based on previous events surrounding Commercial Grade Dedication.	Linda Weir	In Progress Current due date is March 2011
Provide support for populating the corrective action Hub.	Site Managers	Complete
Assign a JSEP coordinator.	Site Managers	Complete
Consider incorporating the Commercial Grade Dedication guidance into the next revision to the Standard Review Plan.	Bob Toro	Complete Currently listed on pending SRP review modules.
Assign representatives to assist in the development and completion of Focus Area #4.	Site Managers	Complete

Status of Action Items (continued)

Action	Person	Status
GS-R-3, ISO, and NQA-1 Overview with Comparison Matrix and examples of audits results from overseas audits	Chris Marden	Complete Copy in meeting materials
Focus Area leads will provide input for updating the project plan (including any new dates).	Larry Perkins	Pending – will be revised based on the discussions today
Distribute a copy of the Standard Review Plan handbook.	Larry Perkins	Complete Copy in meeting materials
Notify EFCOG when the JSEP is ready to populate and the EFCOG chair will send a letter to member encouraging its use.	Christian Palay Joe Yanek	Pending – further discussion of JSEP approach during the presentation today
Follow up with the board members within a week to obtain points of contact for work on Focus Area #4.	Steve Krahn	Complete

Status of Action Items (continued)

Action	Person	Status
Provide a list of individuals that have been involved in the CGD standard to the Corporate Board members to ensure each site is appropriately represented in the process.	Pat Carier Bob Murray	Complete
Evaluate EM-HQ sponsorship of CGD courses to be hosted at various field offices.	Bob Murray	Complete Discussion later today.
Evaluate upcoming projects that are not capital construction projects for inclusion in Focus Area 3	William Huxford	Complete Included in team activities
Evaluate the selection of consensus standards with respect to CD phase as part of Focus Area 3	William Huxford	Complete Included in team activities
Survey of the EM complex to evaluate the needs with respect to resources	Bob Murray	Pending Discussion later today.

U.S. DEPARTMENT OF ENERGY

9th EM QA Corporate Board Meeting

Oak Ridge, TN

Ken Picha, Acting Deputy Assistant Secretary
Safety and Security Program, EM-20

and

Robert Murray, Office Director
Office of Standards and Quality Assurance, EM-23

February 16, 2011

EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

FCOG *Energy Facility Contractors Group*

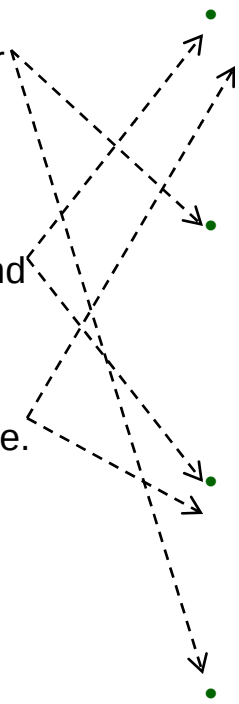
Outline

- EM Corporate QA Board Goals and Bylaws Crosswalk to the Roadmap for EM's Journey to Excellence
- Annual Environmental Management QA Briefing to the Defense Nuclear Facilities Safety Board (DNFSB)
- Recent Corporate QA Issues for Discussion
- Flow Down of QA Requirements
- Suspect and Counterfeit Items
- Phase II Validation Reviews for QA Program Implementation
- High Level Waste/Used Nuclear Fuel
- Other Topics Requiring Board Attention

Linkage Between EM's Journey to Excellence and the EM QA Corporate Board

Core Values of EM's Journey to Excellence

- We care about our mission, have a sense of urgency in the pursuit of our goals and a desire for quality in our work.
- We talk directly and honestly to each other to resolve conflict in a timely and respectful manner.
- We have a questioning attitude and pursue issues until a decision is made.

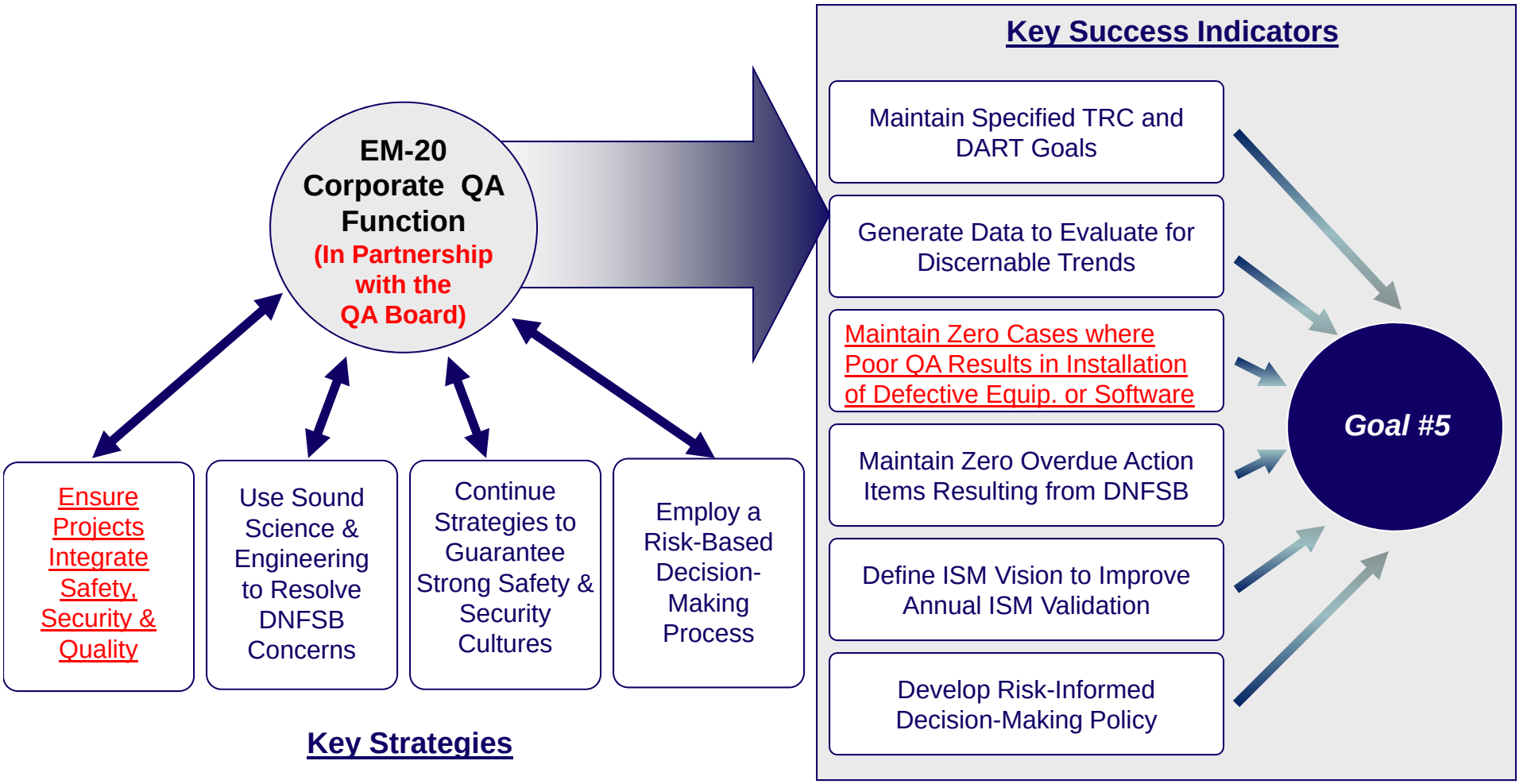


QA Corporate Board Goals and Bylaws

- The Board will serve as a consensus-building body to facilitate institutionalization of a streamlined and efficient QA Management System.
- The Board will provide validation that adequate levels of competent and qualified QA personnel and resources are available to support effective implementation of EM projects.
- The Board will ensure implementation of effective collection, communication, dissemination, and application of project QA lessons learned throughout the EM complex
- The Board will support continuous improvement of the overall EM mission performance

Roadmap: EM Journey to Excellence

Goal 5. Improve safety, security and quality assurance towards a goal of zero accidents, incidents, and defects.



EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

FCOG *Energy Facility Contractors Group*

Highlights of Annual EM QA Briefing to the DNFSB

- Provided DNFSB with an update on:
  - General state of QA across the EM complex
  - QA Program Strategy, Issues, Priorities, Observations, and Actions
  - Detailed discussion on critical QA issues of interest to DNFSB
    - Oversight
    - Graded Approach
    - Flow Down of QA Requirements
    - Suspect Counterfeit Items
- Positive Takeaways
  - Oversight
    - EM is making resources available to provide oversight
    - There is still room for improvement in this area
  - Flow Down
    - Board is reviewing our response to a DNFSB letter on flow-down of quality requirements for the Waste Treatment and Immobilization Project – no comments yet
    - EM provided a shorter technical response as a supplement to the formal response (see meeting materials)
  - Suspect Counterfeit Items
    - EM has the right focus for S/CI (i.e., SS/SC electronics)
    - S/CI reviews and the implementation of industry best practices are the right approaches to help address the issue

Recent Corporate QA Related Issues of Significance

- Update to Standard QA Contract Language for Work Affecting Nuclear Safety (see meeting materials)
  - Current language was issued 2 years ago
  - Update outlines EM requirements and expectations for S/CI
  - Provides 3 options to demonstrate compliance
  - Emphasizes supply chain significance with focus on procurement process for electronic components/subcomponent
  - Needs Corporate Board Approval
- EM position on Use of NQA-1-2008 and NQA-1a-2009 Addenda
  - Request for variance or exemption from requirements of EM-QA-001 not required for sites that choose to implement NQA-1-2008 or NQA-1a-2009 Addenda

Recent Corporate QA Related Issues of Significance (continued)

- S-1 Memo on Improving Mission Execution, dated Jan 14, 2011
  - Expedite and improve the decision-making process
  - Assure that the decisions are made at the right level
  - Application of risk-informed decision-making
  - Greater engagement of career federal employees
  - Identify and eliminate non-value added activities

The above highlights the urgency of the challenges that face the Corporate QA Function and the Corporate Board collectively.

- QA Summit on Improving Construction Projects
  - Targeted and focused on open and frank discussion of project specific experiences, challenges, lessons learned, and solutions

Crosscutting QA Issues
Flow Down

- Response to the DNFSB inquiry on flow down was provided to the DNFSB as noted at the last Corporate Board meeting
- DNFSB has not commented on the response yet
- EM has provided a simplified supplemental response for the DNFSB which provides the technical response vs. the regulatory response in the formal letter
- EM's position is that DOE O 414.1C is flowed down to the prime contractors. Attributes specific to the scope of work are flowed down to subcontractors/vendors by the prime contractors
- EM would like DOE O 414.1D to clarify this issue and has provided suggested language in RevCom
- QA Corporate Board needs to support the assessment of flow-down at the various EM sites
- Summary report due to the DNFSB by the end of March

Crosscutting QA Issues
Suspect/Counterfeit Items

- EM has reviewed S/CI programs across the complex and determined the programs adequately address hardware
- Electronic portion of S/CI programs could be improved within EM
- EM has initiated a series of S/CI reviews for our construction projects focusing on electronics components that are:
  - Safety Class
  - Safety Significant
- EM has reviewed SWPF with plans to conduct a joint EM-23/BNI review at WTP soon
- Corporate Board support for the S/CI electronics reviews is needed
- EM will issue additional guidance as needed on S/CI with respect to electronic components
- Corporate Board would be asked to endorse the S/CI guidance

Crosscutting QA Issues
Suspect/Counterfeit Items (continued)

- EM has prepared a lessons learned memo to the field based on completed reviews. Recommendations include:
  - Post-receipt inspection and functional testing, by itself, is often ineffective – consider shorter supply chains, rigorous assessments, and relationships with original equipment manufacturers in identifying the presence of S/CI electronic component.
  - EM facilities and projects should consider incorporating additional procurement clauses in contracts for acquisition of electronic components
  - EM facilities and projects should enhance assessment checklists used for commercial grade surveys and vendor audits
  - EM facilities and projects should explore the flexibilities found within "best value" procurement approaches when acquiring electronic components
  - For the direct procurement of electronic sub-components, EM facilities and projects should consider testing of a sample of these sub-components upon receipt.

Source: EM-20 Memorandum: Prevention, Identification, and Control of Suspect/Counterfeit Electronic Components, Dated January 11, 2011

Corporate QA Program
Site-Specific Phase II Verification and Validation

- Focus to date has been on implementation of the QAP at the Field/Site Level - Focus has now shiftied to Headquarters
- All sites have completed or scheduled self-assessment Phase II V/V effectiveness of their approved QAP/QIP
- HQ has received approval of the HQ-QIP from the Assistant Secretary
- Phase II review of the HQ implementation is currently underway
- More details will be provided during a later presentation

EM Position on QA Program Aspects
High Level Waste/Used Nuclear Fuel

- EM Interim Policy for Maintaining the Integrity of Quality Assurance Program Commitments for Used Nuclear Fuel/High Level Waste, Memo Dated January 24, 2011 (see meeting materials)
  - Continue to implement Revision 20 of the Quality Assurance Requirements and Description --- except those sites already approved to work to a different revision
  - EM-23 serves as the focal point of contact with Waste Custodian on QA issues related to regulatory interpretation and clarification, assessments, and technical assistance
- Support to the Field Sites Regarding the EM Interim Policy for Maintaining the Integrity of Quality Assurance Program Commitments for Used Nuclear Fuel/High Level Waste, Memo Dated February 04, 2011 (see meeting materials)
  - EM-23 will support the Interim Policy by continuing to conduct independent audits of waste custodians

QA Board Business At Hand

- Bring timely closure to the following commitments
  - Focus Area #1 – (NQA-1 Suppliers) – Joint Supplier Evaluation Program
  - Focus Area #2 – (Commercial Grade Items and Services Dedication Implementation) – Commercial Grade Dedication Guidance Status Including Addition of Software
  - Focus Area #3 – (Design Quality Assurance)
  - Focus Area #4 – (Grading QA for D&D Projects)
  - Training Academy Path Forward and Agreement on Scope
  - DOE Records Management and Applicability of NQA (A potential new focus area)

Other Topics of Importance for the QA Board Consideration

- Availability of HQ QA Resources
  - Sharing of QA resources
  - EM Corporate role, HQ and Field, in backfilling potential resource needs

- Real-Time QA Metrics
  - Corporate Board developed metrics for use in the annual QA declarations
  - Still no visible metrics available that are proactive vs. reactive
  - Should the Corporate Board vote to form a new Focus Area to address this issue?

U.S. DEPARTMENT OF ENERGY

9th EM QA Corporate Board Meeting
Oak Ridge, TN

NATIONAL NUCLEAR QUALITY ASSURANCE CERTIFICATION and ACCREDITATION PROGRAMS

Gustave Danielson
Chief of Nuclear Safety Staff
Office of the Under Secretary

EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

FCOG *Energy Facility Contractors Group*

CONFORMITY ASSESSMENT ORGANIZATIONS in the U.S.

- Four Organizations Provide Conformity Assessment Services in the U.S.; ANAB, ANSI & ASME
  - ANAB Accredits management system certifiers
  - ACLASS Accredits laboratories, etc.
  - ANSI Accredits product & auditor certifiers and training providers
  - ASME To accredit nuclear QA program

ASME QA CERTIFICATION PROGRAM

- "A certification program that verifies by QA manual evaluation and implementation audit that a supplier* has implemented a quality program that meets the requirements of the ASME NQA-1 standard."
- At their June 8, 2010 meeting, the ASME Standards and Certification Board of Directors voted: *To approve the establishment of the Nuclear Supplier Certification Program.*
- Expect program to begin by June 30, 2011, followed by lead auditor certification program

*asme proposes to exclude BPV Section III Suppliers and Regulated Nuclear Facilities

ASME SEES NEED for a QA CERTIFICATION PROGRAM

- Resurgence of nuclear power
- Nuclear supply chain expansion
- New NQA-1 editions and addenda NRC RG 1.28 endorses NQA-1-2008 with 2009 Addenda
- Promote consistent application
- Assist suppliers in becoming “qualified” bidders

BENEFITS for NEW CONSTRUCTION

- Advantage for new suppliers
- Consistency and standardization
- Recognition by ASME that program meets NQA-1 Standard
  - Independent quality evaluation
  - Confirms program implementation to supplier's management
- Allows new supplier to state they are "ready to be a nuclear supplier"

ASME SEES CHALLENGES or ISSUES

- Certification cost
- Certification renewal after becoming an established supplier
- New suppliers without contracts would not be able to demonstrate compliance
- No initial regulatory recognition
- Need to share audit results with purchasers

ANAB PROGRAM

Reprinted with permission of ANAB

Some Family Responsibilities

- ANAB
  - ISO 17021 – Management System Certifiers
- ANSI
  - ISO Guide 65 – Product
  - ISO 14065 – GHG Validation and Verification
  - ISO 17024 – Personnel Certifiers
- ACLASS
  - ISO 17025 – Laboratories
    - ISO Guide 34 – Reference Materials
    - ISO 17020 – Inspection Bodies

Brand Structure

ANSI

ASQ

ANSI-ASQ National Accreditation Board

ANAB Brand
Milwaukee, WI

ACLASS Brand
Alexandria, VA

Accredits

Accredits

Management Systems Certification Bodies

Laboratories, RMPs, Inspection Bodies, etc.

Government Collaboration (CCR database)

- ANAB
  - DHS
  - DOJ
  - EPA
  - FAA
  - FEMA
  - NIJ
  - NIST
- ACLASS
  - Dept. of Navy
  - DOD
  - DOE
  - EPA
  - FCC
  - FDA
  - NIST
  - NRC
  - USDA
  - U.S. Army

ANAB's Business

- The national accreditation body for management systems in the USA
- Accredit CBs to perform management system certifications on global basis
- Work closely with other national accreditation bodies
- Recognized by peers as major leader of MS accreditation in the world

ANAB programs

- Management system CB accreditation areas:
  - Quality
  - Environmental
  - Health and safety
  - Software and software security
  - Emergency response planning
  - Security
  - Other

ANAB programs

- We operate under ISO 17011 with some flexibility
- We accredit certification bodies (CBs) to recognized standards
- Stakeholder participation:
  - ANAB provides oversight on behalf of industry and federal agencies
  - ANAB partners with industry and federal agencies to provide oversight
  - ANAB works with industry and federal agencies to ensure accreditations granted are credible and remain credible

Accreditation process

- ISO 17011
  - General requirements for ABs (organization, management system, competency, etc)
  - Impartiality measures
  - Oversight requirements (initial assessment, surveillance, re-assessment)
  - Accreditation decision
  - Scope extensions, reductions, etc
  - Appeals and complaints process

Accreditation process

- Involvement of stakeholders (Aerospace representation on committees, e.g.)
- Participation of principle industry parties (Aeropsace, Telecommunications, government agencies)
- Impartiality and independence
- Competence
- Oversight based on risk
- Follow-up of complaints from stakeholders, others

Supporting DOE programs

- Accreditation in accordance with ISO 17011
- Use ISO 17021 as framework for CBs
  - Structure and process
  - Emphasis on competence
  - Requirements for audits and surveillance
  - Impartiality and decision on certification
  - Oversight by AB under ISO 17011
  - Provides for industry-specific requirements to be applied as part of process

Supporting DOE programs (continued)

- Examples of modified processes for specific government needs
  - Medical devices – FDA and EU requirements
  - Aerospace – FAA
  - Telecommunications
  - Other examples

New program development

- Stakeholder involvement
- Development of criteria, e.g.
  - Standards providing the basis for certification (10CFR830 Subpart A, Applicable DOE orders, NQA-1, other)
  - Specific accreditation and certification process requirements, e.g.
    - Auditor competency
    - Reporting
    - Handling nonconformities and noncompliance issues
    - Confidentiality
    - Partner with industry via oversight
    - Other

New program development (continued)

- Identification and training of auditors
- Pilot program (phased?) and stakeholder participation
- Lessons learned and launch

Discussion

- Potential benefits to DOE from national accreditation and certifications
- Application of ASME Program
- Development of an ANAB program for 10 CFR 830 and O 414.1

U.S. DEPARTMENT OF ENERGY

9th EM QA Corporate Board Meeting

Oak Ridge, TN

EM/EFCOG and NNSA Supply Chain

February 16, 2011

EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

EFCOG

Energy Facility Contractors Group

NNSA/EM

- NNSA has adopted a JSEP type program
- EM/EFCOG and NNSA personnel are reviewing similarities and the differences
  - 2 meetings conducted to date:
    - 11/10 – EFCOG meeting in Las Vegas
    - 1/11 – DOE HQ
- Intent of working together to analyze the feasibility of merging the programs
- Monitor the NQA-1 certification program for potential impact

DIFFERENCES

NNSA	EM
Uses individuals site audits to fill their data base.	EM uses an audit team comprised of joint contractors under one approved procedure.
Focus is on compliance based audits.	Focus is on both compliance and performance based audits.
Approved Suppliers List	Evaluated Suppliers List
Uses site staff for support for the conduct of audits.	Uses SMEs to supplement the audit team.
Participation is required by COOs via MOU.	Participation is supported by the EM QA Corporate Board.
Uses site procedures, checklists for conduct of audits.	Uses standardized forms, checklists and procedure for conduct of audits.

Recommendation

- Form study team to include representatives from:
  - HSS
  - EM
  - NNSA
  - EFCOG
  - other members of the DOE complex community
- Team to determine the feasibility of a merger

EM MILESTONES

- POC Coordination Meeting - complete
  - 16 sites have identified POCs
- List of Common Vendors – complete
- Roles & Responsibilities – Due 2/11 (Draft)
- Pilot Schedule – Due 2/11
- Pilot Assessment – Due 3/11

U.S. DEPARTMENT OF ENERGY

9th EM QA Corporate Board Meeting
Oak Ridge, TN

Commercial Grade Item and Service Dedication and Lessons Learned

Presenter: Dennis Weaver

February 16, 2011

EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

FCOG

Energy Facility Contractors Group

CGD Guide

- An EM CGD Guide is being developed as a companion to and driver for the approved training.
- The current draft is based on NQA-1a-2009.
- The Guide is being updated to include additional information from EPRI TR-106439, *Guideline on Evaluation and Acceptance of Commercial Grade Digital Equipment for Nuclear Safety Applications.*
- New information is being added to address guidelines for CGD of embedded and stand-alone software including off-the-shelf products.

CGD Guide Contents

- The Draft Standard includes the following information:
  - Definitions, including basis
  - CGD Overview of the Generic Process
  - Technical Evaluation
    - Equivalency evaluation
    - Safety functions
    - Critical Characteristics for design
    - Failure Modes Effect Analysis
    - Critical Characteristics for Acceptance

CGD Guide Contents, Cont.

- Methods of Acceptance
  - Method 1 – Special Tests, Inspections and or Analysis
  - Method 2 – Commercial Grade Survey of Supplier
  - Method 3 - Source Verification
  - Method 4 – Acceptable Supplier/Item Performance Record

CGD Guide Contents, Cont.

- Sampling Plans and Lot Formation
- Suitability
- Oversight and Flow-down Expectations
- Dedication Documentation
- Model CGD Plan
- Examples of completed CGD Plans for items, services, and software

CGD Guide Review

- A review of the Draft Guide has been performed by EM field activities including DOE and Prime Contractor organizations.
- Comments have been received and are being resolved. Approximately 325 comments have been received from 12 Federal and Contractor reviewers.
- The additional information discussed above regarding software embedded and stand alone software is being added as part of the comment resolution process .

Additions for Software

- Use same CGD process as mechanical and electrical systems
- Includes design critical characteristics that address “dependability” attributes that focus on processes used to develop the embedded or stand-alone software
- Method 2 most likely will be a frequently used method for critical characteristics acceptance along with Method 1, but all 4 Methods appear to be applicable
- Examples from EPRI are guiding the effort

Path Forward

- The updated DRAFT Guide will be provided for EM Corporate Board review and approval on April 14, 2011.
- Pat Carier and Bill Smoot have initiated review of the DRAFT EFCOG procedures to insure that the CGD Guide, Approved Training, and implementing procedures are aligned.
- Any comments from this review will be provided to Dennis Weaver for EFCOG consideration as appropriate.

Path Forward, Cont.

- The EM approved CGD training will be updated to include additional information addressing software embedded and stand-alone software.
- The Project Group is coordinating with EM/NE/SC SQA Support Group to present a workshop/training at Hanford in May 2011
- EM is continuing to sponsor CGD training for both EM and NNSA CGD activities with a course taught at Hanford in December 2010 and two courses scheduled for Hanford and MOX (SRS) in February 2011.

Board Approval

- During comment resolution, two questions have come up that need to be voted on by the EM Corporate Board. Specifically,
  - It is the recommendation from the Focus Group for Task 2 that the Task deliverable would be a “Guide” and not a “Standard”.
  - Multiple comments have been received concerning which version of NQA-1 should be used for this guidance. The Focus Area Team recommends that the guidance be based on NQA-1a-2009 with appropriate notations made where that version differs from NQA-1-2004 with addenda through 2007 (as required in EM-QA-001). A note can also be added that the basis for the guidance is not intended to alter any contractual requirements that are based on earlier versions of NQA-1.

U.S. DEPARTMENT OF ENERGY

9th EM QA Corporate Board Meeting

Oak Ridge, TN

Improving Mission Execution

JD Dowell
Office of River Protection

February 16, 2011

EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

FCOG *Energy Facility Contractors Group*

Improving Mission Execution

- 14 January 2011 from Dr. Chu (DOE Wide)
- Facilitated, resourced and focused effort
  - Expedite/improve decision making
  - Make decisions at the right level
  - Risk informed vice consensus decisions
  - Institutionalize changes for long term
  - I.D. and eliminate non-value added activities
  - Review - assess –redirect (living) “reform process”
- High expectations; comprehensive reform; soon

Why it is germane

- It is a ***corporate priority***
- Cross cutting; ***everyone and everything is "on the table"***
- It is an ***opportunity to make positive, enduring change***
- Specifically (EMQACB):
  - COOs and FMCs joint proposal
    - Move to externally validated standards
    - Focus on 14001 . . . For now
    - Others were mentioned:
      - 9001
      - OSHA
  - Think globally (DOE-wide) with things like the JSEP
  - May require responsiveness out side of the CB meetings

Most IME decisions targeted for 6 months

U.S. DEPARTMENT OF ENERGY

9th EM QA Corporate Board Meeting

Oak Ridge, TN

Project Focus Area #3
Design Quality Assurance Focus Area

Butch Huxford
EM-23, Office of Standards & QA

February 16, 2011

EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

FCOG *Energy Facility Contractors Group*

Team Leads

- **DOE Lead: Butch Huxford, DOE EM-23**
- **EFCOG Lead: Robert Thompson, CWI**

Scope – Approve by Board

- Develop best practices for consideration across the EM complex
- Specifically evaluate:
  - Design definition, communication and verification
    - Code of Record development
  - Records required to satisfy NQA-1 requirements
  - Flow down of engineering requirements into specifications, work plans, procurement documents, etc.
  - Inspection and test requirements and acceptance criteria
  - Quality Assurance groups' role in design control
  - Configuration management

Scope – Progress to Date

- White Paper is estimated 85% complete
- Amount of information within the document caused discussions regarding format final deliverable should take.
- Discussions centered around white paper that may discounted or guidance document (not a formal guide) that would provide greater emphasis.

Scope – To Go Effort

- Transition text of white paper to a format more amenable to a guidance document, similar to the CGD or Code of Record guidance documents.
- Guidance document will be circulated for comments among a broader audience using EFCOG and DOE reviewers.

Scope – Proposed Revision

- Action Requested of the Board: Approve revising FA3's deliverable from a white paper to a guidance document to EM Project personnel that:
  - Provides FPDs guidance on what quality assurance requirements should be addressed in procurement documents as well as project specific programs.
  - Provides Contractors guidance regarding the flow down of requirements and requirements that should be addressed within project QA programs, including program requirements for procured items and services.

Schedule

Task #	Estimated Due Date	Task Description	Deliverable	Deliverable To Be Submitted to Project Managers
1	18MAR11	Deliver DRAFT guidance document to select EFCOG QA representatives and FPDs for review/comment	DRAFT Document	YES
2	15APR11	Conclude Comment Period, Receive Feedback	Responses	NO
3	10JUN11	Present Final Recommended Guidance Document to PMs for review/consideration	Guidance Document	YES

Roster

- Butch Huxford
- Robert Thompson
- Greg Hayward
- Robert Leugemors
- Ray Wood
- Larry Zalants

U.S. DEPARTMENT OF ENERGY

9th EM QA Corporate Board Meeting

Oak Ridge, TN

Grading Quality Assurance for Decontamination and Decommissioning Projects

Brenda Hawks
Quality Assurance Director
Oak Ridge Office

February 16, 2011

EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

FCOG *Energy Facility Contractors Group*

Corporate Board QA Task 4 Team

- Brenda Hawks, DOE-OR-EM
- Bud Danielson, DOE-CNS
- Fred Leach, DOE-SRNL
- Clarence Mabry, DOE-SR OSQA
- George Beidler, Energy Solutions
- Mike Nicol, Energy Solutions
- Brian Anderson, DOE-ID
- Bob Davis, CWI
- Danny Cochran, CWI
- J.D. Dowell, DOE-RL-ORP
- T.J. Jackson, DOE-EMCBC
- Shelby Turner, DOE-RL-CHPRC

Final Deliverable

- Focus Area #4 has completed the table/deliverable for the grading of QA on Decontamination and Decommissioning Projects.
- The final deliverable is included in the meeting materials provided to the board members and available online
- Focus Area #4 recommends the deliverable be endorsed and the focus area be closed out as complete

U.S. DEPARTMENT OF ENERGY

9th EM QA Corporate Board Meeting

Oak Ridge, TN

QA Training Initiative

February 16, 2011

EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

FCOG

Energy Facility Contractors Group

Background

- QA Corporate Board first meeting identified the need for a uniform QA training program
- CBFO and DOE HQ developed the first 40 hr training course.
- EM-23 HQ developed the EM Quality Assurance Centralized Training Platform Project Plan
  - EM Classroom Training/Mentoring Program
  - Involvement of Academic Institutions
  - Specific Training Needs

The Current Process

- **Succession Training** exists but has not been fully implemented due to a number of reasons:
  - Significant resource investment from both the sites and DOE HQ
  - Priorities of Specialty Training
- **Specialty Training** exits to address cross cutting quality issues within EM – for example Commercial Grade Dedication
  - Goal is to implement complex wide
  - Effort was greater than anticipated
    - Significant draw upon EM-23 resources
    - Significant demand for training classes

The Current Process Succession Training

- Succession Training Process
  - Phase I: Trainees complete 40-hour basic QA training
  - Phase II: Trainees participate in on-the-job training activities related to oversight under the direct supervision of qualified EM QA personnel
  - Phase III: Trainees needing advanced audit training to qualify for certification as Lead Auditors in accordance with NQA-1-2004 requirements,
  - Phase IV: Follow-up mentoring will be performed
- Phase I is completed for first training class
- Phase II, III, and IV have not been implemented
- Succession training has lost all momentum

The Current Process Specialized Training

- FY-09 mounted a significant effort to resolve the CGD issue
- Spent a considerable amount of time at ORP working to resolve this issue.
- Took the CGD Lessons Learned on the road to all our EM sites.
- Developed course material to teach best practices in CGD and course material to train individuals and the trainers.
- Developed guidance that when approved by EM management will be distributed to all levels of EM.
- Once the training is completed the goal is to turn this training over to a commercial training entity to execute
- Cost of future training will be covered by the requestor

The Issues

- The need for QA resources still exists
- EM should rely on Departmental and commercial training programs to develop QA resources
- The QA Centralized Training Platform, as it exists today, is not practical to implement

Moving Forward

- EM-23 is partnering with the EMCBC to manage the QA Training Qualification Program
  - EM-23 and the EMCBC held a planning/strategy session meeting in December 2010
  - Development of an MOU between EM-23 and the EMCBC is currently underway
  - Initial cursory reviews of existing commercial training programs has been conducted and indicates the potential for positive results

Recommendation

Assign two focus groups to:

Address the September 13, 2010, commitment to the Board to develop a task team to determine if there is a shortage of QA/QC resources within EM.

Evaluate and assess the current strategy for EM QA/QC training and provide a recommended path forward.

U.S. DEPARTMENT OF ENERGY

9th EM QA Corporate Board Meeting

Oak Ridge, TN

NQA-1 Records Management

February 16, 2011

EM Environmental Management

safety ❖ performance ❖ cleanup ❖ closure

FCOG

Energy Facility Contractors Group

Purpose

- Develop guidance to ensure uniform implementation and consistent application of NARA, DOE, EM QAP and NQA-1 requirements for records categorized as QA records.

The Issues

- DEFINING QA RECORDS
  - Clarification need on QA definition and grading of requirements
- CATEGORIZING AND SCHEDULING OF RECORDS
  - NQA-1 categorization – “lifetime” or “nonpermanent”
  - NARA categorization – “permanent” or “temporary” based on the DOE Records Disposition Schedule
- CONFLICTING REQUIREMENTS
  - Inconsistent application of records classified as QA in accordance with RM laws/regulations and NQA-1 requirements.

Recommendation

Develop a Focus Area that includes QA and RM staff across the EM complex to develop guidance.

- Select Focus Area members and develop mission statement

Mission statement could be: “The purpose of the work group is to develop and provide guidance to ensure Federal records classified as QA records are created/received, maintained and dispositioned in accordance with applicable Records Management laws, regulations and directives, as well as, the EM QAP and NQA-1.”

U.S. DEPARTMENT OF ENERGY

9th EM QA Corporate Board Meeting

Oak Ridge, TN

EM Corporate QA Program: Oversight and Implementation

Office of Standards & Quality Assurance (EM-23)
February 16, 2011

EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

EFCOG *Energy Facility Contractors Group*

Outline

- EM Corporate QA Oversight
  - Highlights of FY 2010/2011 Oversight Activities
  - Strategy to Enhance Relevancy and Effectiveness of Corporate QA Oversight

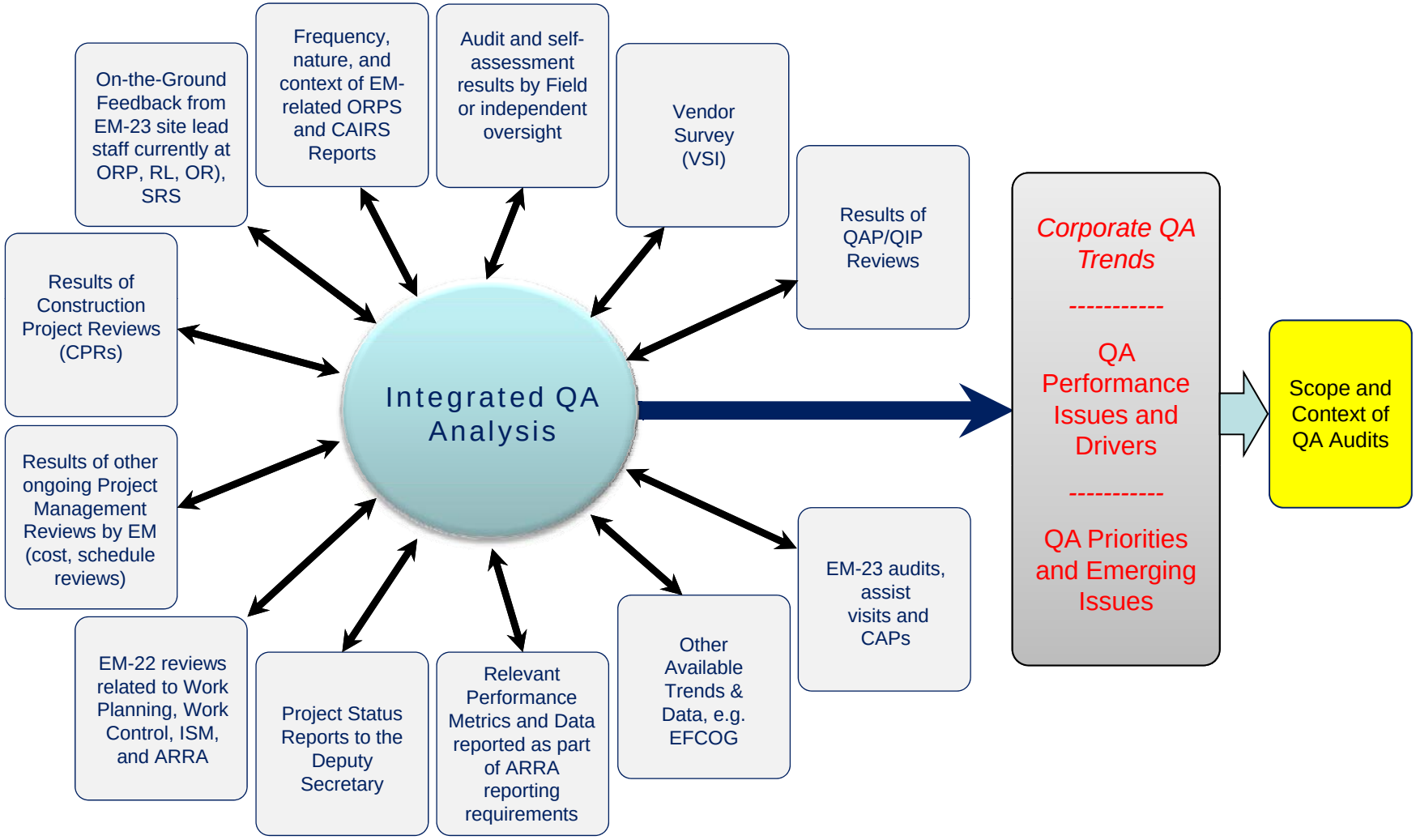
- EM Corporate QA Program Implementation
  - Phase I and II HQ/Site Reviews

Highlights of FY 2010/2011 Corporate QA Oversight Activities

- Participated in numerous performance-based QA assessments in FY2010 and 1st Q of FY2011
  - 5 Construction Project Reviews and 1 Technical Assistance Review
  - 2 Operational Readiness Reviews
  - 13 Issue-driven audits/surveillances of Field Office vendors
  - 4 High-Level Waste and Used Nuclear Fuel (and ISFSI) audits at major sites
- Performed 9 assists/reviews of QA focus areas (CGD, S/CI, Work Packages, ISM/QA) at major sites
- Conducted Phase I HQ reviews of Field QAP/QIPs
- Assisted HQ and Field Offices in conducting its Phase II QAP/QIP flow-down adequacy and implementation reviews

Corporate QA Oversight: Focus on Improving Mission Performance –

Risk-informed approach to prioritizing, planning, and scheduling corporate QA audits



Key Characteristics of Corporate QA Oversight/Audits

- **Scheduling**: Link timing of planned corporate QA audits, as much as possible, to project-specific programmatic and operational needs, e.g., Critical Decision milestones, upcoming purchase of material or fabrication of components

- **Prioritization**: Focus allocation of QA oversight resources to advance corporate priorities and address major issues posing risk to success of mission performance

- **Planning**: Ensure clarity, Field awareness of, and early engagement in development of audit-specific LOIs consistent with core QA performance objectives and criteria established in the EM Standard Review Plan (SRP)

Expected Outcomes

- Closer alignment between corporate QA oversight and real-time EM mission/project needs
- Greater/Increased coordination with the Field
- Focus on risk significant and time-sensitive critical path activities

FY-2011 Published QA Oversight Schedule Reflects Initial EM-23 Efforts to Bring About Desired Enhancements

QA Oversight Observations

Key QA factors that influence likelihood of project success:

- Robust and proactive integration of QA throughout project lifecycle (e.g., design, engineering, construction, and operations)
  - Recognition and awareness of unique QA challenges and risks in each project phase
  - Active engagement of the Federal Project Director (FPD) and the Integrated Project Team (IPT)

- Technically sound and project-specific based incorporation of QA requirements in the procurement process and flow down to the subcontractors
  - Graded approach and understanding of the inherent complexity and risk significance of procured product/service/material

- Effective performance monitoring of vendors and subcontractors
  - Timeliness
  - Meaningful performance measures
  - Technical/engineering capacity and capability

- Sustained management support and involvement in the development and implementation of effective project-specific QAP/QIP
  - Proactive management of cross-cutting QA issues such as CGD, S/CI, SQA, Flow down
  - Workforce awareness, engagement, and ownership of QA

Corporate Partnership to Implementation of EM Quality Assurance Program

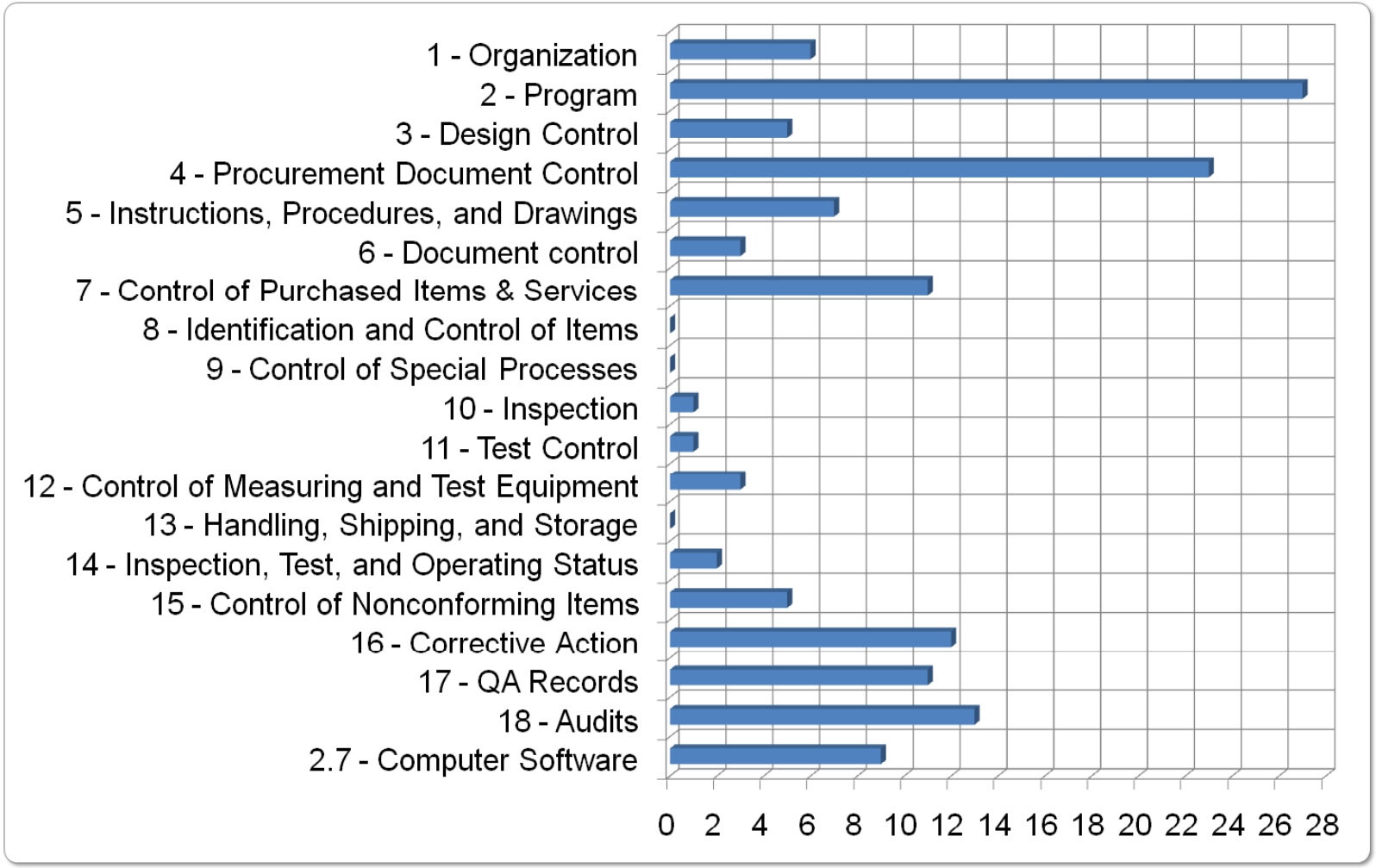
- Issuance of EM-QA-001, *EM Quality Assurance Program*

- EM HQ Memoranda on Implementation
  - EM-20 Memorandum dated February 17, 2010
  - EM-1 Memorandum dated August 17, 2010

- Using a consistent review process: *Protocol for Review EM-HQ Review of Site-Specific QAP/QIPs*

- Two-step process:
  - Phase 1: Programmatic, Format, and Content (Complete)
  - Phase 2: Onsite Self-Assessment (Verification & Validation) of QIP Implementation
    - Adequacy review (Flow-down of QA requirements to Implementing Documents)
    - Implementation review

Site Phase II Results - Issues



Status of EM HQ QAP/QIP Implementation

- HQ QAP is the EM Corporate QAP
- QIP has been developed
  - Gap analysis completed
  - Review of HQ SOPP coverage completed
- Phase I (complete)
- Phase II Implementation review
  - Completed (EM-20, EM-10, EM-50, EM-60)
  - In process (EM-30, EM-40, EM-70, EM-80)

Priorities after Phase II Activities

- Successful completion of QAP/QIP Phase II reviews/self-assessments resulted in identification of valuable insights
  - Critical for each site to ensure that the identified issues are addressed to minimize/prevent risk to the success of projects
  - Leverage the QA Corporate Board to facilitate timely sharing and dissemination of lessons learned and best practices

- An important element of planned HQ corporate QA audits is follow up on status of site-specific actions and commitments made to ensure continuous improvement in QA program implementation

QUESTIONS?

OVERVIEW AND COMPARISON OF INTERNATIONAL QUALITY STANDARDS TO NQA-1-2008

FORWARD

Today's international nuclear industry demands acute attention to safety and quality in order to improve public perception and to assure protection of the worker, co-located worker, general public, and environment from exposure to risks. There are currently three widely used Standards that facilitate judicious application to the wide variety of work encountered by today's international nuclear industry – NQA-1-2008, *Quality Assurance Requirements for Nuclear Facility Applications*, GS-R-3, *International Atomic Energy Agency (IAEA) Safety Standard, The Management System for Facilities and Activities*, and ISO 9001-2000, *Quality Management System Standard*. In addition international suppliers may use national standards, which may or may not be able to meet these 3 international QA standards. Depending on the country of origin suppliers may have adopted any one of these international standards if they are exporting products or services outside their own country,

For USA nuclear purchases overseas, a correlation to the NQA-1 standard is usually specified. Other countries may specify NQA-1, GS-R or ISO

As the nuclear industry supply chain and professional resource pool continues to extend beyond borders, worldwide endorsement of rational, cost-effective quality assurance and safety practices that focus on consistent outcomes is growing, particularly with the expansion of commercial nuclear power. Today, many overseas nuclear plant design-build contracts and affected suppliers are working to a standardized set of criteria.

To aide in the evolution of this process, various guidance documents and compliance matrices are being published, endorsed and, in some cases, included in industry Standards, e.g. NQA-1 includes a comparison matrix to ISO 9001-2000 and GS-R-3 includes comparison matrices to NQA-1 and ISO 9001-2000.

OVERVIEW AND COMPARISON OF INTERNATIONAL QUALITY STANDARDS TO NQA-1-2008

100 Purpose and Scope

The purpose of this white paper is to provide an *Overview* and *Comparison* of ASME NQA-1-2008 Part I and IAEA GS-R-3 requirements and to facilitate *Understanding* the differences between these two Standards.

This white paper does not include an overview and comparison of ASME NQA-1-2008 to ISO 9001-2000. The comparison of these two standards is published and currently available in ASME NQA-1-2008, Part IV, Subpart 4.3.

OVERVIEW AND COMPARISON OF INTERNATIONAL QUALITY STANDARDS TO NQA-1-2008

200 Overview of Standards

201 NQA-1:

ASME NQA-1-2008 defines requirements for an organization to establish, implement and assess a quality assurance (QA) program to achieve nuclear safety. ASME NQA-1-2008 reflects industry experience and current understanding of QA requirements for the safe, reliable, and efficient utilization of nuclear energy, and management and processing of radioactive materials.

The ASME NQA-1-2008 approach applies quality assurance requirements to activities that could affect the quality of nuclear material applications, structures, systems and components of nuclear facilities. Quality assurance requirements are used to develop a Quality Assurance Program necessary to achieve, safe, reliable, and efficient utilization of nuclear energy, and management and processing of radioactive material.

202 GS-R-3:

IAEA GS-R-3 defines requirements for an organization to establish, implement, assess and continually improve a management system that integrates safety, health, environmental, security, quality and economic elements to ensure safety is not compromised. It fosters a strong safety culture and improved safety performance in all the activities of the organization.

IAEA GS-R-3 adopts an integrated management system approach to be applied to all work of the organization. IAEA GS-R-3 requires the integration of safety, health, environmental, security, quality and economic elements of the management system to ensure that safety is properly taken into account in all activities. It specifies requirements designed to achieve and enhance safety, while enhancing the satisfaction of interested parties. A management system based on IAEA GS-R-3 includes safety culture, human performance, a process approach to the achievement of objectives and continual improvement of the management system and its processes.

300 Comparison of ASME NQA-1-2008, Part I, and IAEA GS-R-3

301 Background:

IAEA GS-R-3 and ASME NQA-1-2008 apply to the lifecycle of nuclear facilities and activities, including siting, design, construction, commissioning, operation, and decommissioning. IAEA GS-R-3 and ASME NQA-1-2008 foster the application of requirements in a manner that is consistent with the relative importance of the item or activity.

Both IAEA GS-R-3 and ASME NQA-1-2008 can be invoked by contract, adopted voluntarily, or used as the basis for assessing a management system or a quality assurance program.

Nuclear industry entities that are required to satisfy both IAEA GS-R-3 and ASME NQA-1-2008 as the basis of their management system or QA Program may use the GS-R-3 Application Guide and comparison matrix (Attachment 1) to aid them with integrating the two management systems.

302 Understanding the Differences:
The differences between NQA-1-2008 and GS-R-3 are identified in Attachment 2, *Table 1*.

Table 1 provides a column for the requirements of NQA-1, Part I, and a column for the corresponding GS-R-3 element that specifically addresses the NQA-1 requirement. In cases where GS-R-3 does NOT specifically meet the NQA-1 requirement, recommendations on how best to meet the NQA-1 requirement within the GS-R-3 program are provided. The recommendations are intended to provide what is needed for the GS-R-3 user to meet the specific NQA-1 requirement. In cases where the NQA-1 requirement is met by the GS-R-3 requirement, the specific section of GS-R-3 is stated. And in cases where the GS-R-3 requirements are written in more general terms than the NQA-1-2008 requirements, the user must determine the need to develop detailed practices to ensure adequate and effective implementation of the NQA-1 requirements. In these cases, it is necessary to test the GS-R-3 implementing practice with the requirements of NQA-1 to confirm compliance.

400 Considerations

NRC, NUPIC and commercial nuclear major equipment suppliers have been actively engaged in overseas vendor auditing. While DOE and DOE's prime contractors have not been as active in this arena, there is a compelling case for expanding the NQA-1 qualified vendor pool to overseas vendors. As of this writing, only two audit reports that provide the results of audits performed on overseas entities were obtained and reviewed against the intent of NQA-1-2008 and the applicable International Standard (ISO). The review indicated that the fundamental NQA-1 performance-based measurements were applied to the two ISO audits. It was not apparent that "implementation" was measured against the intent of the international standard, which begs the question, "How much consideration is typically given to the intent of the international standard, when a qualified NQA-1 audit team conducts an audit to an international standard?"

While much is being done to *expose* the nuclear quality and safety community to "other" Standards, there appears to be a need to *educate* industry leaders on the importance of understanding the similarities, differences and, more important, the intent of these standards.

OVERVIEW AND COMPARISON OF INTERNATIONAL QUALITY STANDARDS TO NQA-1-2008

MATRIX 1
THE EXTENT THAT ASME NQA-1-2008 ADDRESSES IAEA SAFETY STANDARD SAFETY REQUIREMENTS NO: GS-R-3

Cross Reference Matrix 1
NQA-1-2008 to GS-R-3

blank = not covered
X = fully addresses
(X) = partially addresses
Note = clarification provided

		CONTENT OF IAEA Safety Requirements No. GS-R-3																									
		2. Management System				3. Management Responsibility					4. Resource Management			5. Process Implementation											6. Measurement, Assessment and Improvement					
CONTENT OF ASME NQA-1-2008 PART I REQUIREMENTS		General requirements (2.1-2.4)	Safety Culture (2.5)	Grading the application of management system (2.6-2.7)	Documentation of the management system (2.8-2.10)	Management commitment (3.1-3.5)	Satisfaction of interested parties (3.6)	Organizational policies (3.7)	Planning (3.8-3.11)	Responsibility and authority for the management system (3.12-3.14)	Provision of resources (4.1-4.2)	Human resources (4.3-4.4)	Infrastructure and the working environment (4.5)	Developing processes (5.1-5.5)	Process management (5.6-5.10)	Generic management system processes (5.11)	Control of Documents (5.12-5.13)	Control of Products (5.14-5.20)	Control of Records (5.21-5.22)	Purchasing (5.23-5.25)	Communication (5.26-5.27)	Managing Organizational Change (5.28-5.29)	Monitoring and measurement (6.1)	Self-assessment (6.2)	Independent assessment (6.3-6.6)	Management system review (6.7-6.10)	Non-conformances and corrective and preventive actions (6.11-6.16)	Improvement (6.17-6.18)
	1 Organization	X			X	X		(X)		X				(X)								(X)						
	2 Quality Assurance Program	(X)		(X)	X	(X)			(X)		(X)	X	(X)	X	(X)									(X)	(X)		(X)		
	3 Design Control																	X										
	4 Procurement Document Control																			X								
	5 Instructions, Procedures and Drawings														(X)													
	6 Document Control				X												X											
	7 Control of Purchased Items and Services																			X								
	8 Identification and Control of Items																	X										
	9 Control of Special Processes																	(X)										
	10 Inspection														(X)			X										
	11 Test Control																	X										
	12 Control of Measuring and Test Equipment																	X										
	13 Handling, Storage, Shipping																	X										
	14 Inspection, Test and Operating Status																											
	15 Control of Nonconforming Items																									X		
	16 Corrective Action																									X		
	17 Quality Assurance Records				X														(X)									
	18 Audits																							X				

Attachment 1

OVERVIEW AND COMPARISON OF INTERNATIONAL QUALITY STANDARDS TO NQA-1-2008

TABLE I

THE EXTENT TO WHICH GS-R-3 ADDRESSES NQA-1-2008 REQUIREMENTS (EXAMPLE)

For copyright reasons, the text of NQA-1-2008 is not included in this table. Key words are included as appropriate to help the reader identify the nature of the requirements. Users should refer to NQA-1-2008 for the full text of the requirements.

Req't	NQA-1-2008	GS-R-3 and Recommendations
1	**Organization**	
1-100	**BASIC**	
	Key words: Responsibilities, organizational structure, functional responsibilities, levels of authority, and lines of communications.	GS-R-3 Requirements 2.8, 3.12 and 3.14.
1-200	**STRUCTURE AND RESPONSIBILITY**	
	201 General Key words: (a) management expectations, (b) quality achieved and maintained by, (c) quality achievement is verified by, (d) sufficient authority, direct access, organizational freedom, access to work, independence, verification functions. **202 Delegation of Work**	GS-R-3 Requirements 2.1, 2.2, 2.4, 3.12, 3.13, 3.14, 5.7, 5.10, and 6.5. <u>Recommendations.</u> GS-R-3 users should address organizational freedom, independence of verification activities, and the following verification functions: (1) identifying quality problems (2) initiating, recommending, or providing solutions to quality problems through designated channels (3) verifying implementation of solutions (4) assuring that further processing, delivery, installation, or use is controlled until proper disposition of a nonconformance, deficiency, or unsatisfactory condition has occurred.
1-300	**INTERFACE CONTROL**	
		GS-R-3 Requirements 5.4, 5.5 and 5.10.

Attachment 2

DOCUMENT TITLE: Overview and Comparison of International Quality Standards to NQA-1-2008

DOCUMENT NUMBER/REVISION: Draft

REVIEWERS: Provided for Comment to CBFO, OR, RL, ORP, CNS, EM-23, ID, EFCOG, EMCBC, PPPO, SR

PAGE	PARA	COMMENT	RESPONSE
General	--	The introductory statements imply that the only version of NQA-1 that is in common use is the 2008 edition. This is incorrect. Facilities in the nuclear industry do not automatically change the edition of a core standard when it is revised. Many power plants are committed to earlier editions of NQA-1, particularly the 1994, 1989 and 1974 editions. Some older plants are even still committed to the NQA-1 predecessor, ASME N45.2 and its daughter standards. I know of no American nuclear power plants that are committed to ISO 9001-2000.	The document title and text specifically address NQA-1-2008. There is no text that indicates that this version is the "only version…in common use" nor are there any statement(s) that imply that faculties "automatically change the edition".
General	--	The entire document discusses ASME NQA-1-2008. However, Attachment 2 is entitled, "TABLE I. The extent to which GS-R-3 addresses NQA-1a-2009 Requirements".	Corrected
General	--	The GS-R-3 standard is not really a "standard" under the paradigm that we use. It's a general description of how management systems should work, not a specification of the minimum requirements for elements of a quality program. It does not address items such as, Use of Computer Programs for Design, Design Verification, and Change Control.	NQA-1, GS-R-3 and ISO, are all "Standards", by title. Discussing interpretation of terminology is outside the scope of this paper. No Action
General	--	For EM contractors using 2004 with addendum to 2007, a mapping to that might be helpful	Considered, however other comments recommended providing and example in Attachment 2 in lieu of a full mapping of all requirements. Based on resolving that requirement, the general statements and discussion could be applicable in this case as well.
General	--	The version of GS-R-3 is not identified. Does there need to be some clarification of the version being utilized?	No, there is no revision or version number associated with the GS-R-3 document.
General	All	Various editorial corrections.	Changed

1	Foreward	Recommend deleting last sentence in 1st paragraph.	This language was added by a separate EFCOG reviewer. As such, we would prefer to leave this statement unless it is factually incorrect.
2	202	Recommend deleting "IAEA GS-R-3 requires the integration of safety, health, environmental, security, quality and economic elements of the management system to ensure that safety is properly taken into account in all activities."	Corrected
3	302	One suggestion is to replace the details of the table with just an example. This will ensure the reader goes to the source doc for actual use. This will avoid any issues with requesting permission to reprint the tables.	Changed
3	302	8th line of paragraph. Define what is meant by "written at a higher level." This term usually means something like "broader or more programmatic in nature" and addresses general program guidance, as opposed to a document that provides steps to be followed on a procedural level. The usage here seems to mean just the opposite.	Reworked
3	400	There is the discussion of expanding the NQA-1 qualified vendor pool to overseas vendors in this section, but no consideration for the process of acquiring Commercial Grade Items using the Commercial Grade Dedication Process.	This is a "Standard" overview document. I do not suggest getting into specifics. No Change
3	400	The discussion of "only two audit reports…were obtained…" is not clear. I assume only two reports were "identified" or "located"?	Correct. Only two audit reports were readily retrievable and available for review by the authors. The authors were not able to identify a larger supply of audit reports from overseas vendor auditing. This is largely due to the fact that DOE and DOE's prime contractors have not been as active in this arena.
3	400	I'm not familiar with the term "skill-based" as applied to an audit team. Suggest defining the term.	Reworded

3	400	Consideration must also be given to the comparability of the intent of the standard used. NQA-1 (any edition) serves as a regulatory and oversight standard and is very rigorous in nature. ISO 9001 was developed as a manufacturer's standard, and may be easily altered to allow for market-place driven conditions. This has a big effect on the relative importance of safety and quality, but even more on the effects on other considerations such as cost and schedule, and quality related functions such as compliance.	Considered and provides a valid point. However, this paper was intended to be a general comparison as requested by the Board, and provides information only. The document is not intended to be a policy or direction to the various EM sites. As such, no action is taken in the existing paper.
Att. 1	--	I assume the "Team Version Rev. C" notation is part of the IAEA standard?	Correct
Att. 2	--	It is not clear why the full text is included for only Section 2-100.	Corrected. The full text was not intended to be included. In addition, the response to other comments removed much of the table and only provides an example now.
Att. 2	--	There are 46 NQA-1 requirements that are not addressed. An additional 25 requirements are not fully addressed.	Change from complete table to an example
Att. 2	--	The author has provided many good recommendations for overcoming the shortcomings of the GS-R-3 document. However, if EM were to adopt GS-R-3 it would require the preparation of either another requirements document or a mandatory guidance document in order to provide the same level of quality NQA-1 provides.	There is no disagreement with this general comment. However, this paper was intended to be for information and not a policy or direction so the comment is noted but no action is taken in the existing paper.
Att. 2	--	Many sections do not list key words. Is this by design?	The intent was to follow the sections of NQA-1; however, the response to other comments removed much of the table and only provides an example now.
Att. 2	--	Some sections state "No corresponding requirement." or "No corresponding requirements." while others state "No corresponding specific requirement." Suggest explaining the distinction.	There was no intent to draw a distinction between the phrases. However, the response to other comments removed much of the table and only provides an example now.

QUALITY ASSURANCE (QA) FOR WORK AFFECTING NUCLEAR SAFETY

The Contractor shall implement a DOE-approved Quality Assurance Program (QAP) (Deliverable X.X.X.X) in accordance with the EM Quality Assurance Program, EM-QA-001, prior to commencement of work affecting nuclear safety. The EM QAP provides the basis to achieve quality across the EM complex for all mission-related work while providing a consistent approach to Quality Assurance (QA).

EM requires that American Society of Mechanical Engineers (ASME) NQA-1-~~,~~ 2004, *Quality Assurance Requirements for Nuclear Facility Applications*, and addenda through 2007 be implemented as part of the Contractor's QA Program for work affecting nuclear safety. However, EM also allows for the use of NQA-1-2008 and addenda through 2009. The required portions of NQA-1 to be implemented include: Introduction, Part I, and as applicable portions of Part II. NQA-1 Parts III and IV are to be used as guidance for the Contractor's QAP and implementing procedures.

Contractors have three options for complying with this contract requirement:

1) Develop and submit for DOE approval a new QAP;
2) Adopt the prior Contractor's DOE-approved QAP; or,
3) Modify the prior Contractor's DOE-approved QAP and submit it for DOE approval.

Development of a new QAP, or adoption of an existing or modified version of a QAP from a prior contractor, does not alter a contractor's legal obligation to comply with 10 CFR 830, other regulations affecting quality assurance (QA) and DOE Order 414.1C.

The Contractor's QAP shall describe the overall implementation of the EM QA requirements and shall be applied to all work performed by the Contractor (e.g., research, design/engineering, construction, operation, budget, mission, safety, and health). Specifically, the contractor's QAP shall also describe the supply chain for electronic subcomponents, require procurement of sub-components only from original equipment manufacturers or original equipment manufacturer authorized distributors, and require electronic subcomponents be procured from vendors with a documented successful history with the supplier.

The Contractor shall develop and implement a comprehensive Issues Management System for the identification, assignment of significance category, and processing of nuclear safety-related issues identified within the Contractor's organization. The significance assigned to the issues shall be the basis for all actions taken by the contractor in correcting the issue from initial causal analysis, reviews for reporting to DOE, through completion of Effectiveness Reviews if required based on the seriousness of the issue.

The Contractor shall, at a minimum, annually review and update as appropriate, their QAP. The review and any changes shall be submitted to DOE for approval. Changes shall be approved before implementation by the Contractor.

Attachment A for Focus Area #4
Things to Consider When Evaluating Grading of Quality Assurance Criteria

Project Focus Area 4 – Grading for Deactivation and Decommissioning Projects

Target Completion Date:

Background:

Deactivation and Decommissioning (D&D) Projects present a challenge in the application of NQA-1. The focus of NQA-1 is on the development and maintenance of nuclear facilities quality assurance. The standard clearly states in the introduction that "This Standard focuses on the achievement of results, emphasizes the role of the individual and line management in the achievement of quality, and fosters the application of these requirements in a manner consistent with the relative importance of the item or activity." The relative importance of the facility and equipment is very low when the ultimate Risk-Based End State is to demolish and permanently dispose of the material. While it is very important that any items that are desirable to another project be preserved and the proper techniques are employed to prevent injury to the workers and/or environment during the D&D the Risk-Based End State must be remembered when establishing the quality requirements for the various stages of activities. Work must be accomplished in a quality manner and within contractual requirement; however, the establishment of the contractual requirements must consider the Risk-Based End State and hazards of the activity to be performed. Too many times, the Risk-**B**ased End State is not kept in focus and the quality requirements for an operating or construction activity are employed on a D&D project resulting in higher costs that provide little to no addition to EM mission accomplishment or safety.

Purpose:

- Enhance awareness of the need to properly grade activities.
- Take advantage of the allowance for grading.
- Provide some examples of things to consider when executing the grading and ways to grade.
- Provide a risk-based flowchart showing the requirements to bring the D&D project from concept to completion such as the use of "value stream mapping"

Attachment A for Focus Area #4
Things to Consider When Evaluating Grading of Quality Assurance Criteria

Status:

1. Ensure EM Corporate Quality Policy allows and encourages grading – Complete

   - EM Corporate Quality Policy allows grading – "It is EM Policy that all EM projects will have a consistent quality assurance approach while allowing for grading based on importance to the EM mission and safety, and for site-specific requirements."
   - DOE P 455.1, Use of Risk-Based End States (Jul 15, 2003) The policy addresses conducting cleanup that is aimed at, and achieves, clearly defined, risk-based end states. https://www.directives.doe.gov/directives/current-directives/455.1-APolicy/view

2. Ensure EM Quality Assurance Program Document, EM-QA-001, allows and encourages appropriate grading – Complete

   - EM Quality Assurance Program Scope states: "The requirements of the QAP are applied in a graded fashion commensurate with the type of work being performed and the importance of the work contributing to safe completion of the EM mission."

3. Evaluate NQA-1 to determine if it clearly allows for grading as needed in the DOE complex due to the significant variations in types of activities and contracts. - Complete

   - NQA-1 Introduction states: "This Standard focuses on the achievement of results, emphasizes the role of the individual and line management in the achievement of quality, and fosters the application of these requirements in a manner consistent with the relative importance of the item or activity."

4. Provide examples of things to consider when evaluating grading. - Complete

See Attachments. (Things to consider when evaluating grading of Quality Assurance Criteria; Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects; and ASME NQA-1, Part II Applicability)

DOE Lead: Brenda Hawks

EFCOG Lead: Frederick Leach

Support Team and Milestones:

The activities and milestones required to complete the recommendations for this focus area have already been completed and are in place. Additional examples will be added to the information provided in the attachments to address the Board's request. The remaining effort is for the EM QA Corporate Board to endorse the approach and flow the approach down through their individual organizations. This endorsement includes all EM federal sites and associated contracts.

Attachment A for Focus Area #4

Things to Consider When Evaluating Grading of Quality Assurance Criteria

Task #	Estimated Due Date	Task Description	Deliverable	Deliverable To Be Submitted to Project Managers
1	11/01/10	Obtain additional perspective from other D&D sites within EM.	N/A	No
2	01/01/11	Update the attachments/tables to provide examples of each grading.	Updated Table	Yes
3	2/16/11	Evaluate comments and revise task deliverable for voting	Plan	Yes

Attachment A for Focus Area #4

Things to Consider When Evaluating Grading of Quality Assurance Criteria

Things to consider when evaluating grading of Deactivation and Decommissioning Projects

- Scope of contract
- Length of contract
- Importance to EM Mission
- Size of contractor staff/employees
- Hazard level of activities (nuclear, security, chemical, industrial, electrical, etc.)
- Method of performance – direct, subcontract to qualified vendor, memorandum of agreement with other DOE Prime Contractors
- Complexity of work activities
- End State of the facility/activity

Attachment B for Focus Area #4

Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects

NQA-1 Requirement		Grading
Part I Introduction	300 – States – "The organization invoking this Part shall be responsible for specifying which requirements, or portions thereof, apply, and appropriately relating them to specific items and services. The organization implementing this Part, or portions thereof, shall be responsible for complying with the specific requirements to achieve quality results."	As stated in this introduction, it is the responsibility of the contractor to specify which NQA-1 requirements and/or portions thereof are applicable. All of this should be included as it only establishes the allowance for grading and definitions.
1. Organization	300 – "When more than one organization is involved in the execution of activities,"	This requirement establishes basic organizational expectations. It should be noted that the Interface Control section does have the stipulation that "Where more than one organization is involved…" – this is typically done through Memorandums of Agreement (or whatever term specific contractors utilize) between various contractors for site activities. This is an acceptable means to achieve compliance as the agreement should clearly the appropriate interface authorities. Internal interfaces can be handled through a section in the QAP with very small simple contractors to eliminate the need for a formal document as the internal interfaces would not require a separate document.
2. Quality Assurance Program	200 – Indoctrination and Training - "Indoctrination and training shall be commensurate with scope, complexity, importance of the activity, and the education, experience, and proficiency of the person." 202 – Training -- "The need for	Section 200 – provides the basis for grading in this area. Scope of the contract, complexity of the contract, the importance of the activity to DOE/regulators/etc., and the people assigned. This section clearly allows for small contractors especially when have short term contracts to rely on the education/experience/proficiency of their staff in lieu of elaborate procedures. While this would most likely not be allowed for a large contactor or one with extensive operating time frame, when the

Attachment B for Focus Area #4

Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects

NQA-1 Requirement		Grading
	a formal training program…. Shall be determined. Training shall be provided, if needed…	contractor is very small and short term the development of some procedures might not be warranted and the QAP can clearly state the reason specify the qualification of personnel performing the activity versus development of elaborate procedures. (Procedures for field operations would still be expected.) Section 202 – Training requirements can be very limited based on the scope of work. Compliance with OSHA requirements and basic training for others might be all that is needed. The QAP can clearly specify this. When in a nuclear hazard category 1, 2, or 3, the training requirements are typically in accordance with DOE O 426.2 (the old 5480.20) for those individuals who can impact the safety basis through their involvement in the operation, maintenance, and technical support. Section 300 – This section states shall specify the required qualification. One way to grade this is to state the contractor will not qualify any individual for activities like Nondestructive examination and tests to verify quality. All such activities will be performed by a procured source that has the required qualification program. 303/304/305 - Qualifications of the "auditing" individuals, warrants evaluation for befit of formal program when the contractor is small, the scope is very limited, and/or the period of performance is short. Allowance for a trained, educated, experience cadre can be frequently justified in Deactivation and Decommissioning activities. 400 – The records of those individuals performing NDE need to be maintained even if it is in the procurement documentation. The records of the Lead Auditor personnel can be handled in a graded

Attachment B for Focus Area #4

Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects

NQA-1 Requirement		Grading
		manner. Note: NQA-1 states, records of qualification and requalification for Auditors and Lead Auditors and for inspection and test personnel shall be established and maintained. Unless the auditing function is subcontracted
3. Design Control		Typically Deactivation and Decommissioning contractors do not do a lot of "design" activities. Therefore, this requirement is typically not applicable. Even if some very simple Design activities are required for say a simple radiological containment, the application of Requirement 3 might not be warranted. Contractors doing formal "design" activities are clearly known and are expected to fully implement this requirement.
4. Procurement Document Control	100 – "… The extent necessary, procurement documentations shall require Suppliers to have a quality assurance program consistent with the applicable requirements of this Standard."	The procurement process for Deactivation and Decommissioning contractors needs to be graded based on the end state for the facility/item. The period of performance needs to be taken into consideration for procured items. When the time period is extremely short, justification on the level of procurement can potentially be downgraded as the increased level does not enhance safety or EM mission accomplishment. Procurement process can also be utilized for procurement of specialty personnel to prevent the need to establish extensive programs like Nondestructive Examination, Inspection and Test, and even Lead Auditor. This is a good way to grade systems and utilize another section/requirement to meet the needs of the unique contacting arrangements.
5. Instructions, Procedures, and Drawings	100 – "… The activity shall be described to a level of detail commensurate with the complexity of the activity and	The requirement itself requires grading of the implementation.

Attachment B for Focus Area #4

Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects

NQA-1 Requirement		Grading
	the need to assure consistent and acceptable results. The need for, and level of detail in, written procedures or instructions shall be determined based upon complexity of the task, the significance of the item or activity, work environment, and worker proficiency and capability (education, training, experience)."	
6. Document Control		This requirement is very basic in concept and the requirements can be met with simple processes based on the contract scope. The main requirement is that documents be controlled to ensure that correct documents are being employed. The contractor can utilize very simple systems to meet this requirement when the complexity of operations is simple. The more complex the activities and organizations involved the more complex the document control process will need to be.
7. Control of Purchased Items and Service		This requirement provides requirements that are based to ensure the Supplier provides the items or service in accordance with the requirements of the procurement documents. The real grading in this requirement is more in the establishment of the "requirements" for the procurement. When establishing the requirements for the procurement the contractor needs to take into consideration the D&D activity and the length of time the item or service will be needed as well as safety and other quality requirements.
8. Identification and Control of Items		This requirement ensures that only correct and accepted items are used or installed. The grading in this area is not as much in the application of the control but rather in the requirement established for the items acceptable for service. With D&D

Attachment B for Focus Area #4

Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects

NQA-1 Requirement		Grading
		activities, there can be greater allowance for use of items.
9. Control of Special Processes	100- "Special processes that control or verify quality, such as those used in welding, heat treating, and nondestructive examination, shall be performed by qualified personnel using qualified procedures in accordance with specified requirements.	When "special processes" are required, this requirement needs to be met fully. However, in D&D activities, one way to meet this requirement is through procurement of qualified individuals that have qualified procedures. This prevents the prime contractor from having to have the programs and qualification processes in place.
10. Inspection		This requirement is graded in the determination of characteristics subject to inspection and inspection methods. For example, receipt inspection, this process can be limited if the supplier has a robust quality program or the prime contractor could hire an independent third party to do the inspections required.
11. Test Control		This requirement can be graded as most D&D contractors do not execute computer program testing; therefore, they would not have to have a program to execute this function. Testing should be limited in D&D activities for the most part and the contractors programs can be graded based on the characteristics to be tested and the test methods to be employed. As this is highly contractor dependent, each contractor would have to evaluate the types of testing required and grade their program based on that evaluation.
12. Control of Measuring and Test Equipment	100 – "Tools, gages, instruments, and other measuring and test equipment used for activities affecting quality shall be controlled, calibrated at specific periods, adjusted, and maintained to required accuracy limits."	The grading of this requirement is very dependent on the size and type of work the contractor will be executing. Some D&D activities require extensive control of measuring and test equipment while others require very little. In either case, the contractor needs to evaluate the level of in-house program they need to maintain and what part is better to procure through a supplier. This evaluation and final determination is the basis for

Attachment B for Focus Area #4

Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects

NQA-1 Requirement		Grading
		grading the contractors program in this area.
13. Handling, Storage, and Shipping		For many D&D activities there is little on site storage of materials and shipping is executed in accordance with Department of Transportation requirements. This requirement can be graded based on application of the DOE Orders, OSHA compliance, and other contractual requirements that govern handling, storage, cleaning, packaging, shipping, and preservation of items. Basically, this requirement should be met if the contractor complies with the requirements in most D&D contracts.
14. Inspection, Test, and Operating Status	100 – "The status of inspection and test activities shall be identified on the items or in documents traceable to the items where it is necessary to ensure that required inspections and test are performed and to ensure that items have not passed the required inspections and tests are not inadvertently installed, used, or operated.	This requirement is very basic and can be ensured in many ways. The grading of this requirement is in the methods utilized to document and identify the inspection, test, and operating status.
15. Control of Nonconforming Items		This requirement is very basic and can be ensured in many ways. The grading of this requirement is in the methods utilized to document and identify nonconformance items. One way grading is different for D&D is that there is a greater potential for acceptance of an item in a D&D type activity as the justification for usage is more flexible.
16. Corrective Actions		The requirement can be graded in the manner in which the identification, cause and corrective actions are generated and documented. The system used to track the condition reports and actions can be another manner in which this requirement can be graded. The grading can be applied based on the type/scope of the activity like D&D as well as on the size of the contractor and period of performance.

Attachment B for Focus Area #4

Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects

NQA-1 Requirement		Grading
17. Quality Assurance Records		The grading in this requirement for D&D is in the designation of what is a quality assurance record. As the facility is to be demolished, this allows for greater flexibility in the determination of the length of time the records need to be maintained for some items. Also, grading can be evaluated as to whom will hold the records, through contract negotiations, the records could be turned over to DOE earlier in the process thereby reducing the storage burden on the contractor. One costly area is the storage of records and the requirements for those facilities. Again, through contract negotiations, this can be graded providing the records are maintained and final disposition is appropriately achieved.
18. Audits		The number of formal Audits for D&D work should be tailored and graded based on the type of activities being performed. One way of grading is in the determination of the experience and training required to lead and participate in the audits.

Attachment C for Focus Area #4 - ASME NQA-1, Part II Applicability

The applicability of each Subpart II requirement is discussed and potential contract requirements that govern the requirement are identified that can be used in lieu of ASME NQA-1 as the applicable standard.

ASME NQA-1 2004, Part II, Subparts:	Applicability
2.1 Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components for Nuclear Power Plants	**Not applicable** to the majority of D&D contracts/Scope of Work.
2.2 Quality Assurance Requirements for Packing , Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants	**Not applicable** to the majority of D&D contracts/Scope of Work. Contractors normally implement the following contract requirements for these work elements: DOE O 460.1B, Packaging and Transportation Safety DOE O 460.2A, Departmental Materials Transportation and Packaging Management DOE M 460.2-1A, Radioactive Material Transportation Practices
2.3 Quality Assurance Requirements for Housekeeping for Nuclear Power Plants	**Not applicable** – this Subpart applies to Housekeeping during construction of facilities. For D&D activities normally implement applicable OSHA requirements and DOE O 5480.19, Conduct of Operations.
2.4 Installation, Inspection, and Testing Requirements for Power, Instrumentation, and Control Equipment at Nuclear Power Plants	**Not applicable** to the majority of D&D contracts/ Scope of Work. One way contractors meet this is by implementing NFPA 70 – 2008 National Electric Code and NFPA 70E - 2009 Standard for Electrical Safety in the Workplace
2.5 Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete, Structural Steel, Soils, and Foundations for Nuclear Power Plants	**Not applicable** – this does not apply to operations and is not part of the majority of D&D contracts/
2.7 Quality Assurance Requirements for Computer Software for Nuclear Facility Applications	**Applicable** to the current scope of operations. DOE contractors implement ASME NQA-1 2004, Part II, Subpart 2.7 as applicable to the scope of work.
2.8 Quality Assurance Requirements for installation, Inspection, and Testing of Mechanical Equipment and Systems for Nuclear Power Plants	**Not applicable** to the majority of D&D contracts/Scope of Work.
2.15 Quality Assurance Requirements for Hoisting, Rigging, and Transporting of Items for Nuclear Power	**Not Applicable** to the majority of D&D contracts/Scope of Work. The requirement is written for hoisting,

ASME NQA-1 2004, Part II, Subparts:	Applicability
Plants	rigging, and transporting during construction. Most DOE contractors implement DOE-STD-1090-2007, Hoisting and Rigging.
2.16 Requirements for the Calibration and Control of Measuring and Test Equipment Used in Nuclear Facilities	**CANCELLED**
2.18 Quality Assurance Requirements for Maintenance of Nuclear Facilities	**Not Applicable** to the majority of D&D contracts/Scope of Work. Most DOE contractors implement the requirements in accordance with DOE Order DOE O 433.1A, Maintenance Management Program for DOE Nuclear Facilities and DOE O 433.1A Implementation Matrix.
2.20 Quality Assurance Requirements for Subsurface Investigations for Nuclear Power Plants	**Not applicable** to the majority of D&D contracts/Scope of Work.

8th Environmental Management Quality Assurance Corporate Board Meeting Minutes
September 13, 2010 – Augusta, GA

Note: Revised by-laws for the EM QA Corporate Board were approved including the resolution of comments from the last meeting. The revised by-laws are posted at http://www.em.doe.gov/Pages/QACorporateBoard.aspx.

Voting Board Members in Attendance (general attendance sheet for the meeting is attached):

Brian Anderson – Idaho

Brenda Hawks – Oak Ridge

Ray Corey – Richland

Jack Craig – Savannah River

Bud Danielson –Chief of Nuclear Safety

T.J. Jackson – EMCBC

Steven Krahn (chair) – Headquarters EM-20

Jack Zimmerman – Portsmouth/Paducah

Bob Murray (vice-chair) – Headquarters EM-23

No Voting Member Present - Carlsbad

Jonathan (JD) Dowell - River Protection

Presentation by Mr. Robert Murray and Dr. Larry Perkins: Welcome & Actions from Chicago Meeting

Bob Murray welcomed everyone to the meeting and provided a summary of the agenda for the day.

Larry Perkins presented the action items from the previous meeting with a status for each action. The actions that have not been completed to date are summarized in the following table with a current status.

SUMMARY OF ACTION ITEMS

Action for Follow-Up	Individual Responsible	Current Status
Provide a revised lesson learned document based on previous events surrounding Commercial Grade Dedication.	Dave Jantosik	Effectiveness review will be conducted in September 2010 and an updated lesson learned will be prepared at the conclusion of that review and provided to the board.
Provide support for populating the corrective action Hub.	Site Managers	This activity is ongoing. Several sites have provided support for the use of the Hub and Larry Perkins will be contacting the sites to help update the current information.
Assign a JSEP coordinator.	Site Managers	Some sites have provided a contact for the JSEP coordinator while others have not. Christian Palay is working with the sites to identify the remaining points of contact.
Consider incorporating the Commercial Grade Dedication guidance into the next revision to the Standard Review Plan.	Larry Perkins	Once the guidance is completed, it can be evaluated for inclusion in the SRP.
Add an additional column in the spreadsheet attachment to the project plan for Focus Area #4 to include examples of grading for each requirement.	Brenda Hawks	The completion of this action is tied to the need for more site support as noted in the following action.
Assign representatives to assist in the development and completion of Focus Area #4.	Site Managers	In progress. As noted later in the minutes, Brenda Hawks has not received sufficient support from the sites for Focus Area #4. The action items for this meeting reflect the need to identify contacts for Focus Area #4.
Generate a whitepaper to discuss what EFCOG has experienced with respect to audits overseas.	Chris Marden	This paper has been drafted and provided for EFCOG review prior to presentation to the board.

Presentation by Dr. Steven Krahn: Cross Cutting Corporate QA Issues

Dr. Steven Krahn provided a discussion of several topics that are of current interest to the federal and contractor QA professionals. Specifically, the presentation addressed:

- Requirements Flow-down
- Suspect and Counterfeit Items
- Commercial Grade Dedication
- High Level Waste/Spent Nuclear Fuel

Dr. Krahn noted that a phone conversation has taken place with the DNFSB Staff regarding the DOE-EM response to the May 5, 2010 DNFSB letter on requirements flow-down. The response has been formally provided to the DNFSB and the conversation served to answer preliminary questions from the DNFSB staff. The dialogue between DOE-EM and the DNFSB is ongoing.

It was noted that a copy of the flow-down response is included in the meeting package. Dr. Krahn also noted that the response is much longer than a typical response due to the specific concerns addressed in the DNFSB letter. The response resulted in the DOE-EM concern that the letter could have called into question the overall EM approach to QA, and a detailed response was warranted.

Dr. Krahn addressed the general summary of items called out in the response including:

- Flow down of technical requirements versus flow down of the order itself. The DOE-EM program allows for the order to be flowed down from DOE to Prime Contractors and the appropriate attributes to be flowed down to sub-contractors (without flowing down the full order).
- A review of HQ assessments was conducted as part of the response; however, the numbers were not sufficient to be statistically valid. As such, the Phase II QAP/QIP implementation self-assessments and the ISM/QA Annual Declarations will specifically address requirements flow-down (as noted in memorandums to the Sites from EM-20). Both reviews are due to EM-HQ by the end of Calendar Year 2010 with a final consolidated report due to the DNFSB by March 2011.

Brian Anderson noted that a standard QA clause was developed by the QA Corporate Board and disseminated to the sites for future contracts. The question is whether the response is consistent with the standard QA clause. Bob Murray answered the question and indicated the standard QA clause had been reviewed and the response provided to the DNFSB is consistent with the clause.

Dr. Krahn discussed that DOE-EM has received a request for information from the DNFSB staff regarding the status of our Suspect and Counterfeit Items program. The request utilized a recent press release on integrated circuits as the driver. Since we use integrated circuits in our defense nuclear facilities, it makes sense to provide a focus in this area of concern. A preliminary response has been provided to the DNFSB staff based on the response received from the field offices.

Dr. Krahn outlined a few points from the information gathered on S/CI in addressing this request. Specifically:

EM noted that the S/CI requirements were flowed down to contractors and we rely on the M&O contractors to help identify potential problems.

There was a good understanding of the concern and the need for reporting as part of our QA programs.

Dr. Krahn noted that as a team, we need to work on a couple items to help with consistency. First, we did not get clear responses in some areas for flow-down of S/CI requirements. Second, reporting (e.g., IG and HSS) was not clearly indicated in each response.

Dr. Krahn also noted that based on the wide variety of responses, EM has decided there is a need for a quick look at the construction projects with large orders of equipment and parts. Bob Murray and his team are working to put a plan together for the four major construction projects. SWPF and WTP will be completed by early October 2010.

Dr. Krahn noted that SRS has responded to the request in more detail (not shown in the status presented on the presentation slides). He also noted that the CBC is working the issue for the small sites as necessary.

JD Dowell asked about the approach to S/CI. He noted that we are already doing QA reviews as part of the Construction Project Reviews and suggested that we could include the S/CI in the CPRs. Dr. Krahn agreed that this approach will work for the upcoming CPRs, but noted that all of the major construction projects may not be reviewed again by the end of the calendar year, providing a need for other opportunities to address the issue.

Pat Carier asked if the DNFSB was dissatisfied with the EM program or if are they trying to drive EM somewhere specifically with respect to S/CI? He noted the information request seems like a lot of questions that require a response. Bob Murray answered the question and indicated he has met with the DNFSB staff several times and his take was that it is not clear what will happen. Some DNFSB staff members are more passionate about the issue than others. Mr. Murray had a discussion with one DNFSB staff member on Friday (September 10th), and there appears to be a lot of energy to resurrect the issue. The DNFSB members themselves also seem to be focused on S/CI. The Board seems to think we (DOE) understand how to address the standard nuts/bolts/brackets, but when it comes to circuitry and electronics, there is a concern. DOE is saying that we have a program in place and should be able to address this issue as well (specifically at SWPF and WTP where we will be purchasing $500 million dollars in equipment in the next few years). DOE has told the DNFSB staff that we will take a vertical slice of safety significant and safety class components at the major construction projects. The review will include at least two purchase orders to evaluate the pedigree of the vendors and suppliers. Assuming the programs are adequate to address this issue, we should be able to show the DNFSB that we have a robust program in place to identify electronic type S/CI. A meeting with the DNFSB staff was also held about 5-6 weeks ago and the DNFSB staff has expressed a concern that there were people in attendance that thought this was not an issue. The DNFSB staff believes that EM fully understands the concern and EM will review the process to see if the concern is valid for the EM program. It is important to go to the construction projects and identify the upcoming procurements, do the vertical slice, and tell the DNFSB if we have a problem. Dr. Krahn noted it is not just high visibility projects in the review, but those where we are doing a lot of purchases. This approach will address the concern and demonstrate that we are responsive to the DNFSB.

Joe Yanek asked if we will be able to differentiate the safety significant and safety class components and see which component was the one used as the end item, or are we removing installed components and sending them for testing? Dr. Krahn responded that the plan should not be developed in this forum, but concern is noted for inclusion in the offline discussions of the approach.

Dr. Krahn continued with details on the commercial grade dedication responses to the EM-2 memo. The memo asked for an evaluation of the CGD programs for each site. EM-20 has received the responses from the sites and some issues and strengths in the CGD programs have been noted and a summary is included in the meeting materials.

Dr. Krahn then gave a brief status of the High Level Waste/Spent Nuclear Fuel programs (Yucca Mountain). He noted that a commitment has been received from EM-1 to continue to use the QARD for HLW/UNF within DOE-EM. An interim policy has been drafted and currently pending in the approval cycle.

Dr. Krahn also noted that we are providing information on the EM QA Corporate Board at the ISM meeting. The emphasis that will be provided is the QA Corporate Board develops deliverables and tangible results. We do not just talk about issues, but take action. This approach is what makes the Corporate Board successful.

Dr. Krahn also noted that there is now a small hand book for senior management to use as part of the Standard Review Plan. The hand book will help senior management to ensure quality is worked into each of our project life cycles.

Several participants asked to get a copy of the hand book. Larry Perkins will respond to these requests.

Presentation by Mr. Christian Palay: Focus Area 1 - NQA-1 Suppliers – Joint Supplier Evaluation Program Database Presentation

Mr. Palay provided a demonstration of the Joint Supplier Evaluation Program (JSEP) including screen shots from the database. He noted that the JSEP is a jointly owned database developed by EFCOG and DOE.

Mr. Palay noted that lead auditor certifications are included in the database but are considered PII and therefore OUO. The team is continuing to work through how to address this issue.

Joe Yanek asked if the company and lead auditor are noted in the database. The user may need to be able to contact the team but how do they obtain that contact information? Mr. Palay noted the comment and will evaluate it with the Focus Area team.

Mr. Palay indicated the database is ready to go online and has gone through the Idaho SQA process. Once the system is online, the team will populate with legacy information to provide a starting point for use.

Mr. Palay also noted that not all sites have participated to this point and he encouraged the sites and EFCOG to fully endorse this approach.

Mr. Palay also noted that the individual responsible for the audits at each site would be the best JSEP coordinator.

Mr. Palay indicated there were some issues to continue working. For example, a recent Idaho assessment was reviewed which was led by a WIPP audit and used WIPP procedures. An individual from CWI indicated they don't use the WIPP procedure. The result is that the coordinator for each site would help develop a procedure to allow the use of the JSEP audits in their program.

Brenda Hawks asked if the JSEP coordinator needed to include federal representatives. Mr. Palay responded that the answer would be yes only if the federal office has an approved suppliers list. For example, ORP has a list but it may not be useful for them to include it in the JSEP given the items that are purchased.

Brian Anderson asked if the point of contact is the same as the JSEP coordinator. Mr. Palay indicated yes – they are the same person.

Mr. Palay discussed the project milestones and noted the deliverable dates have been adjusted.

Bob Murray asked about the list of common vendors on the schedule/milestones. The system is up and running as of this week, so why do we have 15 months before completion of the list of common vendors? Mike Mason and Paul Bills both indicated this appeared to be a typographical error. The POCs will put together a list of vendors to match up and develop a schedule, but the laundry list of vendors has been developed and is included in the schedule in JSEP now (without assigned dates).

Joe Yanek indicated that at some point, EFCOG can send a letter out to encourage their members to use the JSEP and help remove any barriers to participation. He just needs to know when to send the letter, preferably once the system is ready to populate.

Brenda Hawks asked if the database is being used today. Paul Bills said it will roll out tonight (September 13th).

A comment was made that other organizations such as NNSA and Science may also be interested, but agreement was reached that this topic would be discussed offline vs. in this board meeting.

Presentation by Pat Carier: Focus Area 2 Commercial Grade Item and Services Dedication Implementation – Lessons Learned

Mr. Carier provided a status of the draft guide and procedure as the major initiatives that are ongoing with the focus area.

Mr. Carier provided a recap of where we have been, including development of a training program. As an example, Mr. Carier noted that the presentation on CGD was recently provided to the Washington State Department of Ecology with a very good response. Mr. Carier also noted that there is currently an effort underway to provide the training for the DOE Quality Council, with a specific date pending. Input is currently being solicited from

anyone interested to determine where the training should be held next. Mr. Carier will work with your point of contact to help coordinate the training.

Brenda Hawks asked if this was referring to the basic CGD training. Mr. Carier indicated yes.

Mr. Carier indicated the CGD standard is nearly complete and ready to be placed in the concurrence cycle based on the board's recommended actions. He also noted the standard is consistent with NQA-1-2009 as requested by the Corporate Board. Mr. Carier also noted the slide is a little misleading in that the draft standard is consistent with NQA-1-2009 but not really based on it. As part of the development, Subpart 2.14 of NQA-1 was reviewed and the guide is consistent with the discussion in Subpart 2.14.

Bob Murray asked what was meant in the statement there is a lack of a sub-task group. Mr. Carier noted the only person currently assigned is Dennis Weaver through the engineering group but he is not named by BNI for example. Norm Barker asked if they were on the same page with Dennis and Mr. Carier indicated yes. Mr. Carier just wanted to emphasize that Mr. Weaver has not been designated by the contractor, but the involvement is there and there is no hindrance.

Bob Murray noted that the project plan indicates we will have representation from each site. Is this the case? Mr. Carier said some individuals involved in the CGD training development have volunteered, but the point is if you want someone on the team, now is the time to speak up.

Joe Yanek stated that when he signed the project plan, his understanding was there would be a point of contact from each site.

It was also noted that Mr. Weaver is commenting as the subgroup chair for EFCOG, not just as an individual.

Dr. Krahn and Joe Yanek restated that we need to make sure we have buy in and feedback from all of the sites to ensure accountability. Dr. Krahn assigned an action item for Mr. Carier to provide Bob Murray a copy of individuals involved. Mr. Murray will provide that list to the Corporate Board members and have them ensure each site is appropriately represented in the process.

Brenda Hawks asked if Mr. Carier felt all sites have been adequately represented. The answer was no.

Mr. Carier proceeded to provide a brief outline of the draft standard.

Dr. Krahn noted that there has been a lot of concern about method 4 in the CGD process. Do we currently have any caution in the standard? Mr. Carier said yes, but not as strong as the NRC uses. The draft document strongly recommends using another method with #4, since each effort to use #4 only has failed. Mr. Carier also noted that the CGD training includes text that cautions on the use of method #4 alone. Dr. Krahn indicated we need to clearly state somewhere in the document that method #4 alone it is not an approved method. He also noted that EM does not have to allow the use of method #4 alone just because other organizations do. He noted that any disagreement should be vetted with the team prior to issuing the document.

Brenda Hawks asked about the use of DOE LAP and other independent bodies which have been performing successfully. Mr. Carier noted that you still have a responsibility to ensure the accreditation applies to you and is adequate.

Dr. Krahn stated that the bottom line is the words will need to be strong with respect to the use of method #4.

Mr. Carier indicated all comments to date have been addressed and the standard is ready for a broader corporate board review.

Norm Barker noted we should not have 2 scenarios (EFCOG and EM) for CGD guidance and procedures.

Joe Yanek asked if we have allowed enough time in the plan for the dissemination and contract change orders. Mr. Carier indicated the current schedule will be tight, but it is the current plan.

Bud Danielson noted that we are talking about an EM standard and not a DOE technical type standard. Mr. Carier agreed and indicated we will work with HSS before going down the path of a DOE technical type standard. Dr. Krahn also noted that EM has used this approach on technology readiness assessments previously so there is

precedence. Dr. Krahn also noted that we need to be leaders and willing to take the first step to have a consistent approach in the EM program.

Brenda Hawks asked if we will update the dates in task plan. Mr. Carier said yes.

A question was asked about populating the commodities section of JSEP with CGD data if you are looking to buy something and don't have much history. Will it be in the JSEP database? Dr. Krahn stated this could be addressed with something like a box to check if you find a problem with a vendor CGD process; however he noted that we may not publish all of the details (just a means for dissemination of CGD performance). Based on the comments we have received, there were concerns in the level of detail for sharing that information. The concern revolves around legal and regulatory issues. Dr. Krahn also noted that we could address S/CI information similarly. A problem with a program and actual material issues, we could flag as a general item.

Norm Barker asked if it is premature at this point. Mr. Carier indicated the surveys may be a good place to start and Mr. Barker agreed.

A recommendation was made to consider a database to allow sites to share what vendors they have used for specific items with others across the complex to aid in identifying qualified vendors.

Brenda Hawks asked if we need another train the trainer class and indicated Oak Ridge could host it. Mr. Carier stated that there has been some discussion on the fundamental training but not the train the trainer course; but in either case, we need around 20 people to hold the class.

Mr. Carier also asked for any suggestions on how to get the word out about the training (help in promoting the classes). Brenda Hawks suggested that if EM sponsors and pays for trainers – the course could be released through the training matrix (noting that if it is paid by the sites the advertising is done differently). Bob Murray will take an action to find out about the training.

Presentation by William Huxford: Focus Area 3 Design Quality Assurance Focus Area

Mr. Huxford provided a discussion on the scope and current status, noting that the biggest risk and reward is focusing on the construction projects. Mr. Huxford also noted that the team is looking to identify the best practices across the complex.

Mr. Huxford noted the original schedule would not be met for each milestone, but the slip is not substantial and will be addressed in the project plan.

Dr. Krahn asked what the discussion of the focus area is centered on, capital or large construction projects, noting the difference. Mr. Huxford indicated the intent is large construction projects. Dr. Krahn noted there are only approximately 6 of these projects, and he is worried that this is too restrictive, especially since some of these projects are past the point where recommendations from this focus area would help these projects.

Jack Craig noted that we appear to be talking about two extremes and asked if we are intending to look at line items versus construction projects or are we looking at a certain select few operating projects? Dr. Krahn responded that he is aware of multi-million dollar projects that are coming but don't trip the line to be a major capital construction project. He also noted that this effort won't benefit SWPF which is at 99% design complete. The other upcoming projects that are not capital construction projects could be benefited though. In addition, Dr. Krahn noted that projects that did a good job with engineering should be noted to help inform other sites of the noteworthy practices.

Mr. Huxford will use this information in further developing the focus area and circulate the new scope to Board members prior to the next Corporate Board meeting.

Chris Marden asked who some of the team participants were representing and if it would be good to get people from other locations? Mr. Huxford agreed and indicated he is currently working with Brenda Hawks to get support from Oak Ridge. Ms. Hawks noted that Energy Solutions may also want a representative and Norm Barker agreed.

Brenda Hawks noted that it would help in the field to address documentation and records required in transition from design to construction, possibly with some lessons learned from WTP.

Chris Marden asked if we have any good practices noted from the assist visits EM-23 has conducted. Bob Murray indicated he was not looking at previous and current assist/audit reports; however, noted that Ray Wood is on the focus area team and participated in the assist visits, so the expertise is currently present on the team to address the question.

A question was asked to determine if this area is also going to be a focus of CPRs, noting it has not necessarily been in the past. Dr. Krahn asked everyone to look at the SWPF CPR report that is coming out soon since it does specifically address this issue.

Presentation by Brenda Hawks: Focus Area 4 Proposed Technical Approach for Grading QA for Deactivation & Decommissioning Projects

Ms. Hawks indicated that she has sent out the existing information provided at the last meeting to multiple reviewers. She has received no comments, suggesting the information may not have been reviewed in depth. While Chris Marden at EFCOG has assigned an EFCOG lead to assist with the team, no other sites have provided any input. There was a commitment to provide a person from each site involved in D&D to the team, but this has not been provided to date.

Norm Barker noted that EFCOG has a team for D&D that could support the effort.

Dr. Krahn expressed his disappointment with the board members and emphasized the need to get names for the Focus Area #4 team. Dr. Krahn will take an action to follow up with the board members within a week to obtain names of people assigned to work on this area.

Bob Thompson from CWI expressed an interest in participating.

Presentation by Bob Murray: EM HQ Quality Assurance (QA) Assessments

Mr. Murray gave a brief background of the efforts to revitalize QA within EM, which originated in 2007. At that time, EM was tasked with specifically assessing the construction projects as part of the revitalization. In FY2010, the focus for the HQ assessments was CPRs, ORRs, issue driven audits, and HLW audits. Mr. Murray noted that while this is still a focus, we are transitioning from a pure audit mode to the A3 concept of awareness, assistance and assessment. The upcoming focus will also include Phase 2 reviews for QAP/QIP implementation. Mr. Murray noted that EM-23 now has a contract in place with multiple companies (e.g., Navarro and Trinity Engineering) to help provide direct assistance to the field including these Phase 2 reviews. It was noted that the resource disparity across the sites (for different reasons) helps explain the variation in maturity and effectiveness of the QA programs.

Mr. Murray noted some accomplishments and deliverables from FY2010 such as the DOE-EM response to the DNFSB letter on requirements flow-down.

Dr. Krahn emphasized some other positive success areas, such as success in getting QA requirements in the procurement process (as was a focus a year ago). As a specific example, Dr. Krahn provided details on the low level waste ID/IQ contract from the CBC. The original procurement indicated a NRC license removed the need for a QA program. After a robust discussion, the procurement was corrected before being issued. Dr. Krahn also noted that even with this type of success, there is still a need for continued focus in this area.

San Horton asked for expansion on the second bullet on Common QA Issues and Observations slide. Specifically, is this proactive integration of QA early in design tied to any of the CD phases? Would you specify a particular QA standard, e.g., should a consensus standard be specified by CD-1? Dr. Horton noted that the reason for the question is that there appears to be some confusion with respect to the code of record being at CD-2 but is the consensus standard specified earlier? What is the message to the contractor? Dr. Krahn answered the question by indicating that we now have QA reviewed as part of the CPRs (the listed elements for the CPRs did not originally contain QA). Dr. Krahn also noted that the fact we have a code of record at CD-2 does not mean the QAP is not needed prior to that point. Bob Murray also noted that we have the QAP implemented at CD-1 (in agreement with the standard QA contract language).

Brenda Hawks commented that a contractor may be given additional scope, in which case the selection of a consensus standard and QAP implementation would already be completed before initiating the new work scope.

William Huxford also noted how this fits in with the issues they are addressing as part of the focus area #3.

Brian Anderson noted that CD-1 is design and CD-3 is construction – but the bullet questioned by Dr. Horton is a broad and sweeping statement that is too much in a single thought.

Dr. Krahn indicated the question was which requirements from NQA-1 would be expected in CD-1 etc?

Joe Yanek noted that integration of 414.1c was done under the DOE O 413.3A re-write for all CDs; however, Colette Broussard noted it is not clear on when to choose a consensus standard in that guide.

Dr. Krahn noted we have found additional items to investigate for the Focus Area 3 task with Mr. Huxford.

Dr. Krahn pointed out the proposed priority list for FY2011 and asked for any comments from the group to be provided to Bob Murray.

Brenda Hawks asked if the site specific QAP focus is federal or contractor. Mr. Murray said the HQ focus is federal, and the federal QAP focus is where EM-23 will need participation on the assessment teams.

Bud Danielson asked if the order of the priority list relevant or are these all things we definitely will do. Mr. Murray indicated this list is intended to be the priorities we will definitely complete. For example, we have not looked at the tank farms in the recent years and should address them in FY2011.

Mr. Murray noted this priority list is based on available resources and will require a lot of teams on audits for multiple weeks. Our budget request for FY2011 is commensurate with the priorities.

Brenda Hawks noted that she was trying to have a HQ federal employee on all of the major reviews. Mr. Murray indicated our priority list would support this approach.

Charlie Harris asked if there was any path forward for QA resources. He noted that there are people moving around and high turnover rates.

San Horton asked if this was being tracked or a perception. Multiple federal and contractor personnel indicated it had been tracked and appeared to be a real issue.

Mr. Murray commented on the Aiken Technical College effort to develop QA resources that EM-20 is currently supporting. The initiative has already resulted in a DACUM (development of a curriculum) and EM-23 currently has funding for a grant included in the FY2011 budget requests. This funding will provide seed money for the first year, but additional funding from other resources (e.g., EFCOG members) will be required to continue the program. Charlie Harris agreed this effort is vital and suggested the need for funding across the corporate complex to help develop the program. Mr. Murray also noted there is an existing 4 year program in QA at a university in Missouri that we may be able to use to jumpstart our BS program. The desire is to get the first set of QA students in the QA certificate program this year. Mr. Murray noted the real question is where we want to be 5 years from now when we have a class from the program present in the work place with 3 years experience.

Mr. Murray also noted that the QA Academy, which was started in Carlsbad, is currently planned to be moved to the EMCBC in Ohio where we can rejuvenate the QA course (intended to train individuals and send them to be mentored under experienced QA professionals).

Brenda Hawks recommended a consideration also be made to forming a pool of federal staff to allow sharing resources (e.g., each site provides 2 auditors to the pool to allow other sites to draw from for assessments.

Joe Yanek recommended the board consider putting a QA/QC task team together to help look at this training and resources issue from a macro perspective.

San Horton noted that other groups have addressed this issue and concluded that the final answer is the availability of funding (i.e., dollars).

Rick Warriner commented that the crisis was closer than it appeared with the ARRA funding going away. He indicated that half of the staff could be gone without the ARRA money including voluntary reductions in force. Mr. Warriner also noted that the people lost in this effort would likely be the most senior QA personnel.

Dr. Krahn commented that there seemed to be a lot of unease on resourcing, but asked what do we do with this concern?

JD Dowell recommended a study be performed to confirm whether the concern is a real issue.

Brenda Hawks noted that the resource numbers used in the past have been arrived at differently for each site making it hard to compare numbers.

A comment was made that the market demand and lead times for hiring are real time data that could be used to determine if there really is a problem with resources.

Brian Anderson noted that – the ages of the QA staff could be a leading indicator for retirement concerns.

Bud Danielson suggested if we know the ARRA money is running out and we know the types of people we have, we may be able to look at the current ARRA staff and transition/train these resources to help fill QA positions.

Mike Mason commented that it would also help from the DOE side if the contractors were allowed to hire more college graduates and train them instead of requiring strictly experienced QA professionals.

Joe Yanek noted that we have the short term perspective with what vacancies are open today and a longer term perspective with an integrated approach.

Dr. Krahn recommended the group work in the remaining time to develop the ideas and questions that should be addressed in a survey of the complex.

The attendees developed the following Topical Areas/Questions that should be addressed in the resources survey:

1. How many vacancies do you currently have? How long have those vacancies been unfilled? Can you fill the vacancy?
2. Possibly include the Supply chain as needed
3. QA demographics (age, years to retirement, number of subcontractors)
4. Specific Positions (e.g., auditor) and applicable certifications
5. Turnover rate
6. Available training and education programs
7. Specialty needs
8. Current staffing – ARRA versus base
9. Future needs/loss projections – experience /education
10. Causes of the problem
11. Experience (relevant) from other industries
12. How much is it costing you? Bonuses, incentive pay, etc. Maybe word such as “are you providing incentives for these personnel”.
13. Major impediments

Volunteers to assist Mr. Murray in Developing the Resources Survey include:

- John Almon
- Larry Adkinson
- Rick Warriner
- Al Hawkins
- Bob Hinds
- Norm Barker
- Joe Yanek
- Mike Mason
- Chris Marden

Presentation by Mr. Christian Palay: Status on Path Forward for Oversight of High Level Waste and Spent Nuclear Fuel Quality Assurance Programs

Due to time restraints, the presentation specific to the Yucca Mountain status was preempted and will be included in the presentation material posted online at http://www.em.doe.gov/Pages/QACorporateBoard.aspx

Presentation by Gustave (Bud) Danielson: National Nuclear Quality Assurance Certification and Accreditation Programs

Due to time restraints, the presentation specific to the NQA-1 accreditation program was preempted and will be included in the presentation material posted online at http://www.em.doe.gov/Pages/QACorporateBoard.aspx

The next EM QA Corporate Board meeting will be planned for the January/February 2011 timeframe.

Meeting Adjourned

SUMMARY OF ACTION ITEMS

#	Action for Follow-Up	Individual Responsible	Current Status
1.	Provide a revised lesson learned document based on previous events surrounding Commercial Grade Dedication.	Dave Janitosik	Effectiveness review will be conducted in September 2010 and an updated lesson learned will be prepared at the conclusion of that review and provided to the board.
2.	Provide support for populating the corrective action Hub.	Site Managers	This activity is ongoing. Several sites have provided support for the use of the Hub and Larry Perkins will be contacting the sites to help update the current information.
3.	Assign a JSEP coordinator.	Site Managers	Some sites have provided a contact for the JSEP coordinator while others have not. Christian Palay is working with the sites to identify the remaining points of contact.
4.	Consider incorporating the Commercial Grade Dedication guidance into the next revision to the Standard Review Plan.	Larry Perkins	Once the guidance is completed, it can be evaluated for inclusion in the SRP.
5.	Add an additional column in the spreadsheet attachment to the project plan for Focus Area #4 to include examples of grading for each requirement.	Brenda Hawks	The completion of this action is tied to the need for more site support as noted in the following action.
6.	Assign representatives to assist in the development and completion of Focus Area #4.	Site Managers	In progress. As noted later in the minutes, Brenda Hawks has not received sufficient support from the sites for Focus Area #4. The action items for this meeting reflect the need to identify contacts for Focus Area #4.
7.	GS-R-3, ISO, and NQA-1 Overview with Comparison Matrix and examples of audits results from overseas audits	Chris Marden	This paper has been drafted and provided for EFCOG review prior to presentation to the board.
8.	Focus Area leads will provide input for updating the project plan (including any new deliverable dates).	Larry Perkins	N/A – New Action
9.	Distribute a copy of the Standard Review Plan handbook.	Larry Perkins	N/A – New Action
10.	Update project plan to reflect any new deliverable dates	Bob Murray	N/A – New Action
11.	Notify EFCOG when the JSEP is ready to populate and the EFCOG chair will send a letter to member encouraging its use.	Christian Palay Joe Yanek	N/A – New Action
12.	Follow up with the board members within a week to obtain points of contact for work on Focus Area #4.	Steve Krahn	N/A – New Action

SUMMARY OF ACTION ITEMS

#	Action for Follow-Up	Individual Responsible	Current Status
13.	Provide a list of individuals that have been involved in the CGD standard to the Corporate Board members to ensure each site is appropriately represented in the process.	Pat Carier Bob Murray	N/A – New Action
15.	Evaluate EM-HQ sponsorship of CGD courses to be hosted at various field offices.	Bob Murray	N/A – New Action
16.	Evaluate upcoming projects that are not capital construction projects for inclusion in Focus Area #3 (Design).	William Huxford	N/A – New Action
17.	Evaluate the selection of consensus standards with respect to CD phase as part of Focus Area #3 (Design).	William Huxford	N/A – New Action

ATTENDANCE				
#	**First Name**	**Last Name**	**Contact Email**	**Organization**
1.	Larry	Adkinson	larry.adkinson@srs.gov	DOE-SR
2.	John	Almon	john.almon@ch2m.com	CH2M Hill
3.	Brian	Anderson	andersbs@id.doe.gov	DOE-ID
4.	Norm	Barker	nrbarker@energysolutions.com	Energy Solutions
5.	Paul	Bills	paul.bills@inl.gov	BEA/INL
6.	Colette	Broussard	colette.broussard@hq.doe.gov	DOE-HQ (HSS)
7.	Steve	Calvert	calvert@navarro-inc.com	Navarro
8.	Pat	Carier	patrick_p_carier@rl.gov	DOE-ORP
9.	Ray	Corey	ray.corey@rl.doe.gov	DOE-RL
10.	Jack	Craig	jack.craig@emcbc.doe.gov	DOE-SR
11.	Cherri	DeFigh-Price	cherri.defigh-price@parsons.com	EFCOG Eng. Subgroup
12.	Jonathan (JD)	Dowell	jonathan.dowell@rl.doe.gov	DOE-ORP
13.	Jerome	Ebner	jerome.ebner@areva.com	Areva Federal Services
14.	Al	Hawkins	albert.hawkins@rl.doe.gov	DOE-RL
15.	Charles	Harris	charles.harris@srs.gov	DOE-SR
16.	Brenda	Hawks	hawksbl@oro.doe.gov	DOE-ORO
17.	Robert	Hinds	robert.hinds@srs.gov	URS/SRR
18.	W. San	Horton	walterh@dnfsb.gov	DNFSB
19.	Butch	Huxford	william.huxford@srs.gov	DOE-HQ
20.	TJ	Jackson	tj.jackson@emcbc.doe.gov	DOE-EMCBC
21.	Ashok	Kapoor	ashok.kapoor@hq.doe.gov	DOE-HQ
22.	Dave	Kimbro	kimbro@navarro-inc.com	Navarro
23.	Steve	Krahn	steven.krahn@em.doe.gov	DOE-HQ
24.	Wayne	Ledford	ledford@navarro-inc.com	Navarro
25.	David	Lowe	john.almon@ch2m.com	CH2M Hill
26.	Chris	Marden	cmarden@energysolutions.com	Energy Solutions
27.	Mike	Mason	mjmason@bechtel.com	Bechtel National
28.	Russell	McCallister	russell.mccallister@lex.doe.gov	DOE-PPPO
29.	Bob	Murray	robert.murray@em.doe.gov	DOE-HQ
30.	Christian	Palay	christian.palay@hq.doe.gov	DOE-HQ
31.	Larry	Perkins	larry.perkins@hq.doe.gov	DOE-HQ
32.	Steven	Ross	steven.ross@em.doe.gov	EM-HQ
33.	William	Rowland	bill.rowland@srs.gov	DOE-SR
34.	Robert	Thompson	robert.thompson@icp.doe.gov	CWI
35.	Dave	Tuttel	david.tuttel@parsons.com	Parsons
36.	Tilak	Verma	trverma@energysolutions.com	ES/UDS
37.	Rick	Warriner	richard_d_warriner@rl.gov	CHPRC-RL
38.	William	Webb	efkhwebb@aol.com	Longernecker & Associates
39.	Jimmy	Winkler	jimmy.winkler@srs.gov	SRNS
40.	Joe	Yanek	joe.yanek@fluor.com	Flour Government Group
41.	Jack	Zimmerman	jack.zimmerman@lex.doe.gov	DOE-PPPO
42.	Rochelle	Zimmerman	rochelle.zimmerman@lex.doe.gov	DOE-PPPO

Roadmap

EM Journey to Excellence

U.S. Department of Energy
Office of Environmental Management

Revision 0 – December 16, 2010

[Inside Front Cover]

Letter from the Assistant Secretary

We have recently commemorated the 20th anniversary of the Environmental Management Program. For 20 years, we have attracted, trained, and retained a premiere nuclear workforce. For 20 years, we have expertly and safely managed nuclear waste and overcome challenges associated with the world's largest nuclear cleanup. For 20 years, we have protected the health and safety of communities around the country who are home to the environmental legacy left behind from decades of nuclear weapons production and government-sponsored nuclear energy research, which was vital to our Nation's security.

We have made tremendous progress and have celebrated our success in the face of many management challenges throughout the program's development. We will continue this momentum and build on it. With this solid footing, we now embark on a Journey to Excellence; that is, becoming an organization that is learning lessons and improving; benchmarking ourselves against the best peer organizations; and building a culture of professionalism, that develops leaders and innovators, and that enables mission completion.

I am pleased to present this Roadmap for EM's Journey to Excellence. It will serve as our guide by clearly defining our destination, the path we will take to reach our destination, the principles by which we will behave, and how we will measure our progress on the way. I am particularly pleased to present this to you because it is the culmination of input from Headquarters and Field employees. All of you have had the opportunity to help shape our Journey's goals, strategies, and success indicators. I want to thank each and every one of you who participated in this process. We have a clearer vision and more meaningful Roadmap due to your thoughts, ideas, questions, and comments.

Our organization has first-rate employees; leading-edge equipment and facilities; and disciplined safety, acquisition, and project management processes. We will continue to focus on risk reduction and cleanup that is safe, environmentally responsible, cost effective, efficient, and prioritized based on sound principles. We will continue to engage the public, Tribal Nations, regulatory agencies, State and local governments, and other stakeholders in developing cleanup strategies and making sustainable decisions. We will keep to our core values for our customer, the American people, who are at the forefront of our minds in everything we do.

While I believe achieving excellence is a continuous journey rather than a final destination, I also think it is important to acknowledge the tremendous work we have already accomplished. EM has successfully completed the cleanup of several sites, turning liabilities into assets. EM constructed and is operating the first permanent geological repository for radioactive waste in the world. Your past successes are numerous. Your future accomplishments are certain. Thank you for taking this Journey to Excellence with me.

Inés Triay
Assistant Secretary
Office of Environmental Management

EM Core Values

1. We care about our mission, have a sense of urgency in the pursuit of our goals and a desire for quality in our work.
2. We demonstrate accountability by taking ownership, meeting our commitments, and admitting our mistakes.
3. We acknowledge and reward individual and team successes.
4. We talk directly and honestly to each other to resolve conflict in a timely and respectful manner.
5. We communicate clearly and concisely and check for understanding.
6. We ask for help when we need it and we look for ways to help each other succeed.
7. We have a questioning attitude and pursue issues until a decision is made.

DOE Management Principles

1. Our mission is vital and urgent.
2. Science and technology lie at the heart of our mission.
3. We will treat our people as our greatest asset.
4. We will pursue our mission in a manner that is safe, secure, legally and ethically sound, and fiscally responsible.
5. We will manage risk in fulfilling our mission.
6. We will apply validated standards and rigorous peer review.
7. We will succeed only through teamwork and continuous improvement.

Table of Contents

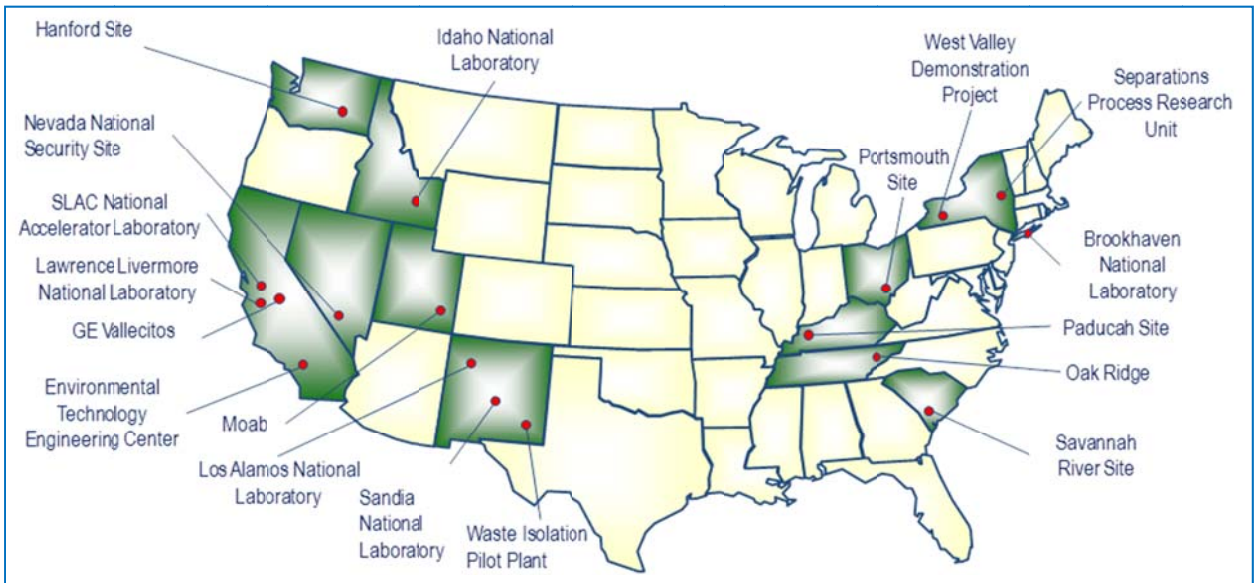
[Page intentionally left blank]

Our Location – Where We Are

Overview of the EM Program

Fifty years of nuclear weapons production and government-sponsored nuclear energy research in the United States during the Cold War generated large amounts of radioactive wastes, spent nuclear fuel, excess plutonium and uranium, thousands of contaminated facilities, and contaminated soil and groundwater. During most of that half century, the Nation did not have the environmental regulatory structure or nuclear waste cleanup technologies that exist today. The result was a legacy of nuclear waste that was stored and disposed of in ways now considered unacceptable.

In 1989, DOE established the Office of Environmental Management (EM) to solve the large scale and technically challenging risks posed by the world's largest nuclear cleanup. EM built a new nuclear cleanup infrastructure, assembled and trained a technically specialized workforce, and developed the technologies and tools required to safely decontaminate, disassemble, stabilize, disposition, and remediate unique radiation hazards.



Funded Environmental Management Program Sites throughout the United States as of the end of the 2010 Fiscal Year

During its first 10 years, EM managed the most urgent risks, maintaining safety at each site while negotiating State and Federal environmental compliance agreements. Currently the program has about 40 cleanup agreements and is committed to meeting its obligations under these agreements. During the past several years, EM's record of meeting its compliance milestones has exceeded 90 percent. Missed milestones have been due to such factors as safety, project management, and competing priorities. During the first decade, the program also concentrated on characterizing waste and nuclear materials and assessing the magnitude and extent of environmental contamination.

In the late 1990s, the program shifted from managing risk into accelerating risk reduction. This effort marked a transition away from characterization and stabilization and into an active cleanup and closure program. During the past decade, EM has made substantial progress in nearly every area of nuclear waste cleanup, and continues to focus on reducing risk. Most recently, EM has received American Recovery and Reinvestment Act (ARRA) funding to create jobs while also accelerating cleanup by reducing the contaminated footprint, so the land and infrastructure can be made available for other uses.

More than 90 percent of EM's cleanup is accomplished through the use of contracts. EM strives to improve its acquisition, contract management and project management processes through application of best business practices. EM is standardizing the acquisition process as it transitions to performance-based contracts. It has organized its cleanup portfolio into discrete projects, which it manages in accordance with accepted industry practices and DOE directives.

Technology innovation, development, and deployment are key elements of the EM program. The technology program has been designed to provide a best-in-class science and engineering foundation, technical assistance, and new technologies to resolve program uncertainties and risks in cleanup decisions, reduce costs, and accelerate schedules. An essential component of EM's technology program is its work with scientists and engineers from DOE's national laboratories, private industry, and academia. The focus of this program is on highly-radioactive tank waste processing, soil and groundwater characterization and remediation, and facility deactivation and decommissioning.

EM's cleanup would not be nearly as successful without the full involvement of its stakeholders, who provide insights and advice on how to best implement and improve the program. The program has Federal Advisory Committee Act chartered citizen advisory boards at eight cleanup sites. EM also supports working groups with the National Governors Association, the National Conference of State Legislators, the Energy Communities Alliance representing local governments at EM sites, and the State and Tribal Government Working Group. EM also works closely with its Federal and State regulators to ensure that cleanup is being conducted in accordance with the applicable laws, regulations, and compliance agreements, and in ways and according to schedules that protect public health and the environment.

The Cleanup Challenge

EM Cleanup scope included the remediation and processing of about:

- 13 metric tons of plutonium
- 108 metric tons of plutonium and uranium residues
- 88 million gallons of radioactive liquid tank waste
- 2,400 metric tons of heavy metal of spent nuclear fuel
- 158,000 cubic meters of transuranic waste
- 1.4 million cubic meters of low-level waste and mixed low-level waste
- 450 nuclear facilities, 3,600 industrial facilities, and 900 radiological facilities

EM's cleanup mission poses unique, technically complex, and costly challenges which can only be achieved through an exceptional workforce. The program has 40,000 Federal and contractor employees with the necessary skills and experience such that it is a world leader in the safe

management and disposition of radioactive waste and nuclear materials and the remediation of contaminated facilities, soil, and groundwater.

Past Reviews of EM and Key Findings

In 1998, EM developed *Accelerating Cleanup: Paths to Closure*,[1] a "projectized" approach to cleanup, which more fully defined the life-cycle scope and cost of the EM program. The report outlined the evolving EM cleanup program based on site-developed, project-by-project forecasts of the scope, schedule, and cost to complete cleanup. As a follow up to *Paths to Closure*, at the direction of the Secretary, the Assistant Secretary for EM conducted a *Top-to-Bottom Review*[2] of the EM program and its management systems, with the goal of quickly and markedly improving program performance. The review, published in 2002, concluded EM's focus was on managing worker, public and environmental risks, rather than actually reducing or eliminating those risks.

Following the recommendations of the *Top-to-Bottom Review*, EM committed itself to extensive management reforms and re-focused programmatic objectives. Since that time, EM has pursued the recommendations of the *Top-to-Bottom Review* and it has been the primary focus of EM leadership to build a best-in-class capability in EM for contract and project management.

The aggressive innovations of EM leadership for improving EM's performance were in initial stages of implementation when, in FY 2006, the House and Senate Appropriations Committees requested in the appropriations bill that the National Academy of Public Administration (NAPA) conduct a management review of the EM program. EM leadership strongly supported NAPA's proposals, which focused on organization and management, human capital, acquisition, and project management, and immediately began implementing them. The NAPA recommendations continue to play an important role in EM's organizational development.

The Government Accountability Office (GAO) designated DOE's contract management as a high-risk area in 1990. Based on progress over the past two years, GAO has narrowed the scope of this high-risk area to focus on EM and the National Nuclear Security Administration. While GAO recognizes EM has demonstrated progress implementing corrective actions, it still believes a number of projects are at risk in meeting cost and schedule goals, particularly because of the quality of cost estimates. While we are improving, there is more work to do.

EM's Progression

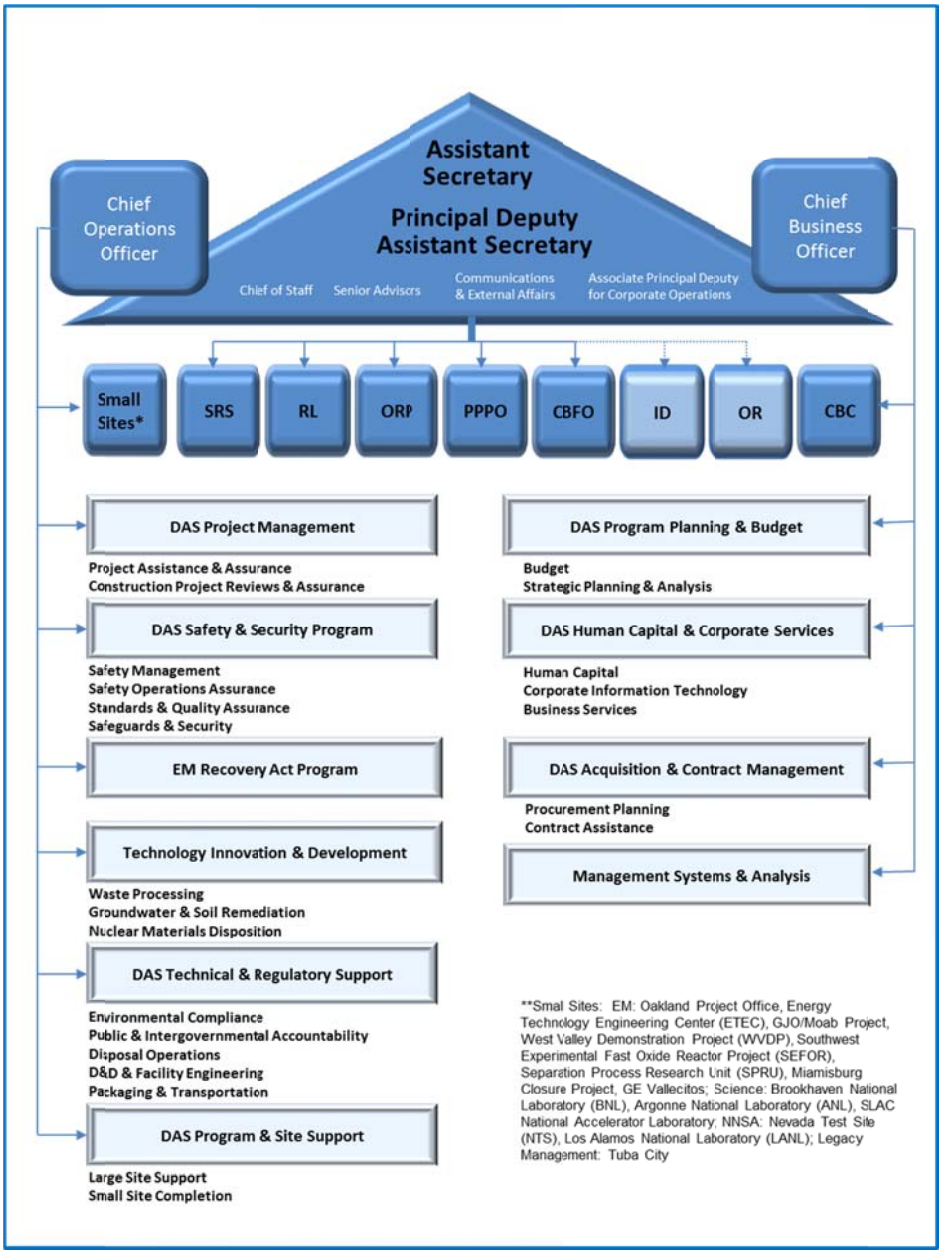
As identified in "*Status of Environmental Management Initiatives to Accelerate the Reduction of Environmental Risks and Challenges Posed by the Legacy of the Cold War*" (DOE/EM-0004, January 2009),[3] the EM program has made substantial progress in every area of nuclear materials and waste management and environmental remediation, and it has done so in a safe and

[1] *Accelerating Cleanup: Paths to Closure,* http://www.em.doe.gov/Publications/accpath.aspx
[2] *Top-to-Bottom Review,* http://www.em.doe.gov/pdfs/16859ttbr.pdf
[3] *Status of Environmental Management Initiatives to Accelerate the Reduction of Environmental Risks and Challenges Posed by the Legacy of the Cold War,* http://www.em.doe.gov/pdfs/NDAA%20Report-(01-15-09)a.pdf

compliant manner. In addition, it has implemented business systems that can support the efficient conduct of this multi-billion dollar enterprise. This progress has been the result of an evolution to best-in-class processes and practices.

The "Journey to Excellence" is premised on stabilizing the program to a best and sustainable way of carrying out the mission using a business model that places authority and accountability closest to where the actual work occurs—in the field. At the same time, the Headquarters roles have been aligned to strengthen its policy and planning functions and provide organizational best practices across the complex. This model was developed with the following objectives in mind:

- Continue highly focused efforts that correspond to established program goals and priorities;
- Improve the ability to deliver projects safely, on time, and within cost;
- Create a better alignment between the Field and Headquarters;
- Clarify roles and responsibilities;
- Strengthen accountability;
- Emphasize and support initiatives important to the Administration; and
- Accomplish the alignment with minimal disruption to EM staff.



<u>EM's Organization</u>

The EM Leadership Pyramid and supporting organizational structure has been designed to emphasize the role of the field in accomplishing EM's mission, to successfully deliver on program commitments, and to be held accountable

by the Administration, Congress, tribal nations, stakeholders, and the public at large. The Chief Officers, by having fully integrated organizations led by Deputy Assistant Secretaries (DAS) and Office Directors, translate the Assistant Secretary's requirements into more strategically packaged and coordinated guidance to the Field. Ultimately, the work is accomplished in the Field by contractors with the oversight of the Field Managers and their staffs.

EM's Priorities

After providing for the essential activities to maintain the safety, security and compliance at its facilities, EM prioritizes activities that safely treat and disposition the largest number of curies per volume, such as, liquid tank wastes, because they reduce the most significant environmental, safety, and health threat EM faces. Thus, the following are the program's priorities.

Program Priorities

- Essential activities to maintain a safe, secure, and compliant posture in the EM complex
- Radioactive tank waste stabilization, treatment, and disposal
- Spent nuclear fuel storage, receipt, and disposition
- Special nuclear material (SNM) consolidation, stabilization, and disposition
- Transuranic (TRU) and mixed/low-level waste disposition
- Groundwater and soil remediation
- Excess facilities deactivation and decommissioning (D&D)

Where We Are Going – Destination

EM Mission

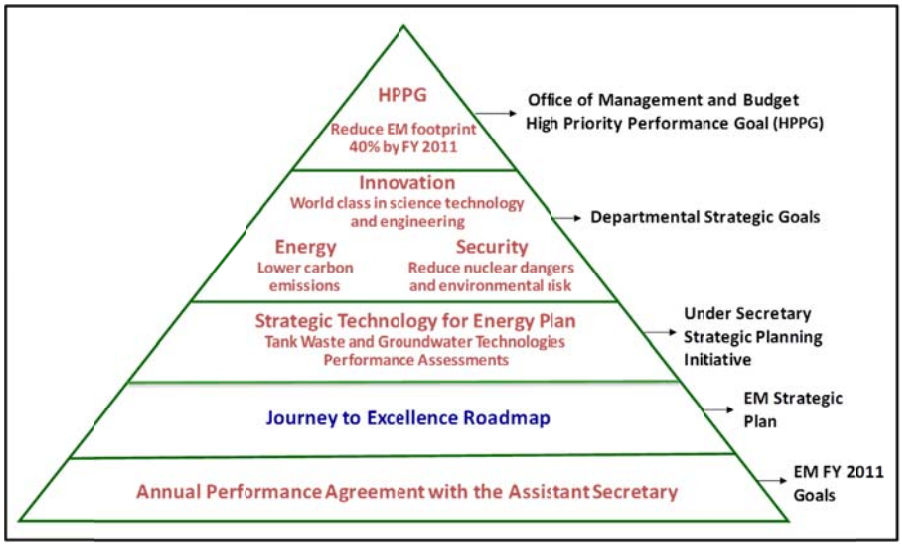
To safely transform the environmental legacy of the Cold War into assets available for the Nation's future by completing quality cleanup work on schedule and within cost, delivering demonstrated value to the American taxpayer.

EM Vision

To be viewed as one of the best managed government programs and the employer of choice in the Federal Government.

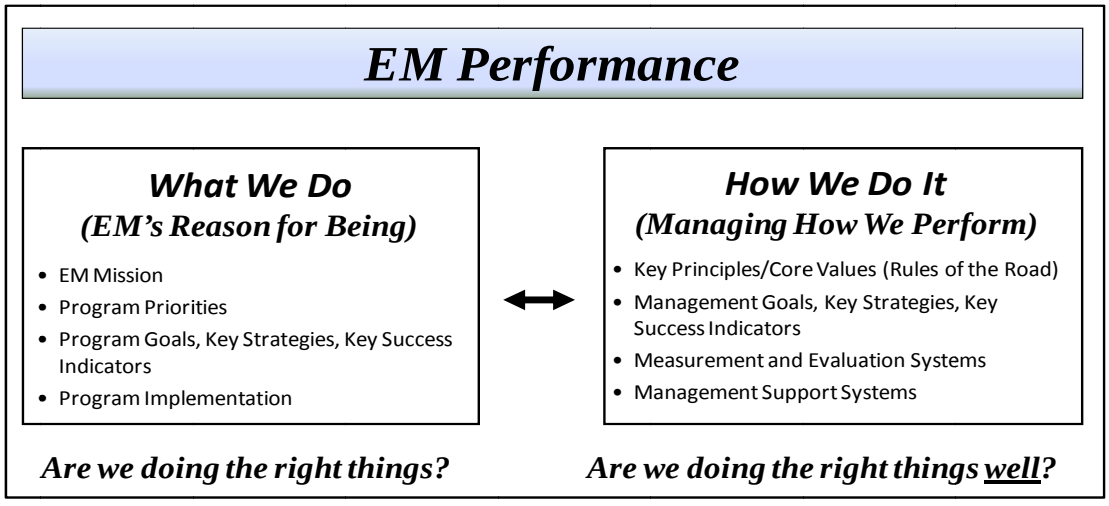
How We Get There – Our Goals

To fulfill our mission and achieve our vision, we have developed a set of goals that define the steps to help lead us to our destination and guide us on our Journey to Excellence. These goals were developed in the context of and in support of Administration and Departmental policies, strategies, and initiatives as shown in this figure.



Hierarchy of Strategic Goals

The goals fall into two related categories—those that are programmatic (what we do) and those that are managerial (how we do it), as illustrated in the figure below. There are four program-related goals and three management-related goals. The following sections outline these goals, enumerating the key strategies for achieving each goal and key success indicators for measuring achievement of the goal. The pursuit of these goals will be based on continuous process improvement using X-Teams as appropriate. X-Teams are an external focused and adaptive methodology to solve complex technical problems. It was developed at the Massachusetts Institute of Technology and senior EM management has been trained on its use.



What We Do – Program Goals

Goal 1. Complete the three major tank waste treatment construction projects within the approved baselines.

EM has millions of gallons of highly-radioactive liquid tank waste. Processing of the highly-radioactive tank waste located across the DOE complex makes up over 30 percent of the life-cycle cost of the EM program. Completing the construction and commencing the operation of three facilities (see below) to process the liquid waste is crucial to the success of the EM program since they will stabilize this waste into a safe, stable form for ultimate disposal. In addition, DOE remains on GAO's High-Risk List because large capital asset projects, such as these, struggle to meet cost and schedule expectations. EM will successfully achieve this goal by acquiring the best resources and managing and safely implementing these projects in the most effective and efficient manner (see related Goal 6).

The first project, the Sodium Bearing Waste Treatment Facility at the Idaho National Laboratory, will process 900,000 gallons of sodium bearing waste (500,000 curies) currently stored in four 300,000-gallon underground tanks onsite. These tanks are between 35 and 45 years old and are located directly above the Snake River Plain Aquifer, a major source of drinking and irrigation water, in concrete vaults of a design that present structural safety issues. The 1995 Settlement Agreement with Idaho requires DOE to "cease-use" of the tank farm facility tanks by December 31, 2012.

The second project, the Salt Waste Processing Facility (SWPF) at the Savannah River Site, will process 37 million gallons (379 million curies) of high-level radioactive tank waste currently stored in 49 tanks onsite. Processing this waste is required to meet regulatory commitments for waste removal and closure of Savannah River Site radioactive liquid waste tanks. These tanks will not meet future requirements for secondary containment that go into effect in 2014. When operational, the SWPF will separate the highly radioactive cesium and actinides from the salt solution. After completing the initial separation process, the concentrated radioactive liquid waste with cesium and actinide waste will be sent to the nearby Defense Waste Processing Facility where it will be vitrified. The remaining salt solution will be mixed with grout at the nearby Saltstone facility for disposal onsite. SWPF operation also supports EM mission goals for disposition of legacy wastes by greatly reducing the number of vitrified waste canisters and significantly reducing tank closure life-cycle schedule and costs.

The third project, the Waste Treatment and Immobilization Plant (WTP), is being constructed to process and stabilize up to 53 million gallons (176 million curies) of waste currently being stored in 177 underground storage tanks on the Hanford Site. Most of these tanks are single-shell tanks, with some dating back to the 1940s. The project consists of four large individual facilities: 1) a Pretreatment Facility that separates the waste into high-radioactivity (small volume) and low-radioactivity (large volume) fractions; 2) a Low-Activity Waste Vitrification Facility; 3) a High-Level Waste Vitrification Facility; and 4) an Analytical Laboratory. In addition, the project includes construction of infrastructure needed to support operation of the WTP facilities, such as chiller plants, steam plants, and air compressor facilities.

Key Strategies

- Work with the Federal staff, contractors, and union representatives to ensure that the projects have the necessary tools (such as technology resources, innovative tools to maintain motivation, and a strong owner's presence) to succeed in the most efficient manner.
- Partner with national laboratories, industry, academia, and the Corps of Engineers to ensure the best scientific and engineering resources are used, so that the technologies selected for development and deployment and the design and construction approaches used will help reduce risk, lower cost, and accelerate project completion.
- Establish an integrated design/engineering testing and commissioning framework across the EM complex to support project teams and enhance technical decision-making.
- Use the Code of Record concept to only make project changes that are essential to project success.[4]
- Use Construction Project Reviews (CPRs) to identify and assist in resolution of key project issues related to scope, cost, schedule, project risk management, and technical approach.
- Ensure the contract fee is aligned with completion of each capital asset.

Key Success Indicators

- Project cost and schedule performance indices are between 0.9 and 1.15, demonstrating that the project has acceptable performance with respect to cost and schedule. [5]
- Ninety percent of CPRs are performed as scheduled and results indicate fewer and fewer recommendations with each successive review.
- Ninety percent of Corrective Actions associated with recommendations identified in CPRs are finished within six months of the completion of each CPR.
- Interim success parameters, including schedule milestone metrics for each project, are developed and evaluated monthly and can be used to predict project success.

Goal 2. Reduce the life-cycle costs and accelerate the cleanup of the Cold War environmental legacy.

Estimates for EM's life-cycle cost for the cleanup of the Cold War environmental legacy ranges between $272 billion and $327 billion, with a confidence level between 50 percent and 80 percent, respectively. The remaining cost ranges from $190 billion to $244 billion. The life-cycle cost for tank waste is between $88 billion and $117 billion, of which $18 billion has been spent to date. In addition, EM estimates cleanup will be completed between 2050 and 2062. With this remaining cost and schedule in front of us, there are many opportunities to make investment decisions that will significantly reduce the life-cycle cost and accelerate cleanup.

[4] Code of Record (COR) refers to the set of requirements in effect at the time a facility or item of equipment was designed and accepted by DOE.
[5] 1.0 indicates 100 percent performance.

As the EM's life-cycle baseline indicates, high-level waste accounts for approximately 32-36 percent of the total EM cleanup cost, and is the major contributor to EM's cleanup liability. In addition, the amount of funding that is available to apply to "on-the-ground" cleanup work is limited by the amount of security, surveillance, infrastructure, and overhead costs to maintain the hundreds of nuclear and radiological facilities across the complex. Reducing costs at the majority of EM sites requires reducing the number of nuclear and radiological facilities and remediating the contaminated soil and groundwater underneath these facilities.

Therefore, two key strategic initiatives will be the focus of Goal 2 in the next several years. These are Enhanced Tank Waste Treatment and Footprint Reduction. EM will focus its technology development and deployment (TDD) investments to mature the science and technology associated with tank waste processing, treatment, and waste loading. In addition, EM will leverage base funding to deploy mature tank waste processing technologies to enhance the current tank waste cleanup approaches. For example, EM's Tank Waste Integrated Project Team recommended seven major transformational strategies to reduce the life-cycle cost and length of program execution. Several of these have been adopted at Savannah River and at Hanford. EM believes it can reduce the life-cycle cost by $3 billion and the life-cycle schedule by six years at SRS and by $16 billion and seven years at Hanford.

Footprint Reduction is defined as remediation of an area and the immediately surrounding buffer zone, if necessary, such that cleanup has achieved all regulatory requirements (i.e., all soil contamination has been remediated, contaminated facilities dispositioned, and a groundwater remediation system is in-place and operable) and whereby the previously affected land area may be made available for potential beneficial reuse, transitioned to long-term remedial operations, or made ready for transfer for long-term environmental stewardship.

EM has formed an Enhanced Tank Waste Strategic Team charged with integrating and focusing efforts to mature and deploy the necessary technologies to accelerate the tank waste mission. Some examples of these efforts include taking a mobile, modular approach to tank waste treatment, using rotary microfiltration and small column ion exchange at-tank treatment technologies to eliminate the need for costly additional treatment plants; investigating the viability of alternative treatment processes such as Fluidized Bed Steam Reforming to generate a mineralized waste form with higher "single pass" capture of problematic radionuclides (i.e., technetium-99 and iodine-129); increasing radioactive glass loading and processing throughput to reduce tank waste canister production and processing schedules; and developing next generation melters such as cold crucible or advanced joule-heated melters to improve waste processing.

To aid in EM's efforts on minimizing LCC, the program will also address groundwater and soil contamination issues. Reducing the liability of subsurface contamination is paramount to reducing the risk to the water supply in the regions adjacent to DOE sites. This effort has the potential to save approximately $10 billion from the EM life-cycle cost.

EM will utilize its research and development (R&D) assets to develop an understanding of the subsurface physical, chemical, and biological processes through three field research sites: the Biogeochemical Processes for Applied Subsurface Science Center at Savannah River; the Deep Vadose Zone-Groundwater Applied Research Center at Hanford; and the Mercury Remediation and Characterization Center at Oak Ridge. This understanding will guide in the development of technologies that take advantage of natural processes for the sequestration and remediation of contaminants eliminating the need for pump and treat systems with annual costs exceeding $10 million and reducing the amount of excavation required. In addition, the Advanced Simulation Capability for Environmental Management (ASCEM) program will leverage EM's science investments and advances in high performance computing models. ASCEM is based in solid modeling of the appropriate physical systems and will improve the program's understanding of risk and aid individuals who are not experts in soil and groundwater modeling in making sound decisions. This capability will produce savings by reducing the cost to investigate remediation strategies, scale up technology development, and provide the quantitative and technically defensible basis for transitioning from source or active treatment to passive attenuation-based systems.

EM will also provide the Blue Ribbon Commission on America's Nuclear Future (BRC) with information on its current plans and potential enhancements to assist the Commission with its work.

For footprint reduction, EM has successfully tested the concept of investing in accelerated cleanup completion at sites with no further DOE mission or discrete areas of large operating sites. Most recently, EM has used ARRA funding to accelerate soil and groundwater remediation, transuranic and low-level waste disposition, and to perform decontamination, decommissioning, and demolition of facilities years sooner than these activities were scheduled to occur. Removing contamination, dispositioning waste, and reducing the site footprint will avoid costs by reducing security, surveillance, maintenance, infrastructure, and overhead that otherwise would continue for years to come.

EM estimates that such footprint reduction measures already undertaken will save more than $4 billion and avoid another $3 billion in life-cycle costs while also making lands and facilities available for other uses. The processes used to successfully carry out ARRA cleanup activities, those used subsequent to the *Top-to-Bottom Review*, and other innovative concepts will be studied and implemented as appropriate with the goal of reducing life-cycle costs. More specific and nearer-term footprint reduction strategies are discussed in Goal 4. For other mission activities, EM will continue to review its budget and program priorities to identify opportunities to achieve the greatest risk reduction benefit, meet its regulatory compliance commitments, and to implement the best business practices in pursuit of cleanup progress.

EM will continue to work with the Congress, regulators, stakeholders, and tribal nations in evaluating how we meet our requirements to ensure we are applying them in the most effective manner, using state-of-the-art technologies. The existing regulatory framework enables the Department to operate its complex while at the same time carrying out its responsibilities under regulatory agreements to come into compliance with current environmental laws and regulations. EM will continue to review its cleanup agreements to identify strategies and actions, including

those not foreseen at the time the agreements were signed, that can efficiently accelerate risk reduction.

Key Strategies

- Develop an R&D roadmap for the development and application of advanced modeling and simulation tools to accelerate progress on EM challenges in 2011.
- Engage the Department's basic and applied research capabilities to develop novel methods for addressing high-level waste that can accelerate progress and reduce costs of this multi-decadal program.
- Prioritize the TDD, base, and applicable Recovery Act funds to best achieve this goal.
- Integrate and manage the TDD investment and insert technologies at appropriate maturity.
- Continue to use the National Academy of Sciences, Environmental Management Advisory Board, EM Technical Experts Group, and the expertise of EM Federal staff to inform us on how best to achieve reductions in the life-cycle cost for the tank waste mission.
- Provide BRC information and cost benefits based on current plans and potential improvements.
- Use appropriate system planning models to demonstrate the benefit of deploying state-of-the-art technologies and/or more effective strategies in order to reduce the life-cycle cost of the tank waste cleanup mission.

Key Success Indicators

- Develop an EM Enhanced Tank Waste Strategic Investment Portfolio that prioritizes the TDD and base funds with the goal of accelerating the tank waste cleanup schedule by six years at Savannah River and seven years at Hanford, and reducing EM's environmental liability and life-cycle cost by $3 billion at Savannah River and $16 billion at Hanford.
- Ensure that by the end of FY 2012, both Hanford and SRS baselines reflect the new transformational technologies required to support accelerating the schedule by six years at Savannah River and seven years at Hanford, and reducing EM's environmental liability and life-cycle cost by $3 billion at Savannah River and $16 billion at Hanford.
- Baseline planning completed to support the Enhanced Tank Waste Strategy.
- By the end of 2011, develop/modify a system-planning tool that illustrates the benefits of deploying state-of-the-art technologies and/or more effective strategies in order to reduce the life-cycle cost of the tank waste cleanup mission.
- Utilizing the three field research sites, develop alternative passive remediation technologies that reduce the life-cycle cost of cleanup by 20 percent.

Goal 3. Complete disposition of 90 percent of the legacy transuranic waste by the end of 2015.

Management and removal of legacy transuranic (TRU) waste from generator sites directly supports risk reduction and the goal of reducing the EM site footprint. Achievement of this goal will also enhance DOE's strategic energy goals, by increasing public confidence that nuclear waste can be safely and cost-effectively transported and disposed. Goal 3 also contributes to reduction in EM life-cycle costs and further demonstrates DOE's proven ability to permanently dispose of legacy TRU waste inventories. As of the end of FY 2010, approximately 78,000 m^3 has been disposed from the collective TRU waste inventory as low-level, mixed low-level, contact handled (CH) TRU and remotely handled (RH) TRU wastes. The Recovery Act investment in TRU waste has reduced EM's life-cycle cost by $1.2 billion.

In 2010, the National TRU Waste Program prepared the TRU Waste Acceleration Plan to identify work that could be accomplished through base and Recovery Act funding. This plan provided an integrated and accelerated approach to working off TRU waste inventories across the DOE complex. Priority was placed in key areas such as meeting regulatory commitments and enabling site footprint reduction while maximizing the rate of TRU waste disposal through FY 2011. SRS was authorized to continue its TRU waste work using Recovery Act funding into calendar year 2012. The additional time will enable the completion of the entire TRU waste inventory at SRS.

A key expectation for this acceleration is that DOE sites prepare sufficient Waste Isolation Pilot Plant (WIPP)-eligible waste to sustain a rate of 30 CH and 5 RH waste shipments per week to fully utilize the waste handling and disposal capacities of WIPP. The Recovery Act funding and associated acceleration provided the opportunity for EM to pursue the longer term Goal 3 of completing disposition of 90 percent of the legacy TRU waste inventory by the end of FY 2015.

There are specific regulatory drivers for TRU waste disposition, such as the Idaho Settlement Agreement, which established a target that all TRU waste and alpha contaminated low-level waste would be out of the State of Idaho by end of calendar year 2015. At Los Alamos National Laboratory, shipment of TRU waste supports a 2015 Consent Order milestone to complete cleanup in Area G. At Hanford, Tri-Party Agreement M-91 Milestones establishes requirements for TRU waste retrieval and characterization. At Oak Ridge, the Site Treatment Plan establishes milestones for TRU waste inventory processing and characterization. Goal 3 directly supports achievement of these, and other, enforceable regulatory commitments.

Critical to the success of Goal 3 is the continued use of mobile equipment and personnel to minimize costs for characterizing, certifying, and shipping TRU waste. A number of DOE sites have small amounts of TRU waste and/or lack the costly facilities necessary to package and characterize TRU waste for compliance with WIPP disposal requirements. The Central Characterization Program (CCP) deploys equipment and personnel across the TRU complex to retrieve, package and perform characterization and certification of TRU waste inventories. The CCP also loads and certifies all transportation packages of contact-handled and remotely handled TRU waste for shipment to the WIPP.

At the Idaho National Laboratory (INL), the Idaho Settlement Agreement, Mixed Waste Site Treatment Plan, and Hazardous Waste Permit allow the receipt of off-site waste as long as specific time constraints are met. Therefore, the CH TRU waste from some generator sites is being certified by the CCP for transportation to INL to be treated by the Advanced Mixed Waste Treatment Plant (AMWTP), if necessary, and certified by AMWTP or CCP for transportation to and disposal at WIPP.

This goal addresses the legacy TRU waste for which EM is responsible and which is currently planned for disposal at WIPP. This total volume is approximately 131,000 m^3. Goal 3 requires a cumulative total of about 118,000 m^3 to be disposed by the end of fiscal year 2015. To date, approximately 78,000 m^3 of legacy TRU has been disposed—either at WIPP as TRU or as low-level or mixed low-level waste at near surface disposal facilities; therefore, an additional 40,000 m^3 must be disposed through fiscal year 2015. The disposition of low-level and mixed low-level waste from the sites' legacy TRU waste inventories contributes to achievement of Goal 3. It is important to note that EM and other DOE programs continue to generate TRU waste requiring disposal at WIPP. While this newly generated volume is not specifically included in Goal 3, the disposition of these TRU wastes will be accommodated.

Key Strategies

- Centralize the characterization of small quantity sites' TRU waste in Idaho.
- Expand and enhance Central Characterization Program capabilities.
- Utilize shielded canisters to accelerate transportation and disposal of RH TRU wastes.
- Process and dispose of Large Box TRU, utilizing the TRUPACT-III.
- Align contract incentives at WIPP and TRU generator sites to support specific legacy TRU disposition targets each year.

Key Success Indicators

- Attain an average disposition rate of 8,000 m^3 per year from the legacy TRU waste inventory.
- Complete disposition of TRU waste at the eight small quantity sites identified in the CBFO TRU Waste Acceleration Plan by September 2011.[6]
- Achieve site regulatory milestones related to legacy TRU disposition.
- Dispose of a cumulative total of 118,000 m^3 of legacy TRU waste by the end of fiscal year 2015.

[6] EM Small Quantity Sites Completed: Lawrence Livermore National Laboratory (LLNL), General Electric Vallecitos Nuclear Center (GEVNC), and Nevada Test Site (NTS). EM Small Quantity Sites to be completed in FY 2011: Lawrence Berkeley National Laboratory (LBNL), Sandia National Laboratory (SNL), Bettis Atomic Power Laboratory (BAPL), Argonne National Laboratory (ANL), and NRD, LLC.

Goal 4. Reduce the EM legacy footprint by 40 percent by the end of 2011, leading to approximately 90 percent reduction by 2015.

EM will achieve its footprint reduction goal by completing major cleanup activities as required by regulatory agreements and accelerating closures within the targeted areas at two large sites (Hanford and Savannah River Site).[7] EM will also complete legacy cleanup at four smaller sites (Brookhaven National Laboratory [BNL], SLAC National Accelerator Laboratory [SLAC], the Separations Process Research Unit [SPRU], and GE Vallecitos[8]). While these small sites do not provide major contributions to footprint reduction as measured in square miles, they represent full completion of cleanup requirements at the targeted sites and are major achievements relative to the overall EM mission. Footprint reduction will be accomplished through decontamination and decommissioning (D&D) of excess legacy facilities and soil and groundwater remediation at legacy sites. These maximize the reduction of environmental, safety and health risks in a safe, secure, compliant, and cost-effective manner. Removal of contamination also reduces monitoring and maintenance life-cycle costs and liabilities.

A key strategy is to leverage ARRA efforts towards existing scope (debris removal, soil and groundwater remediation, facility D&D, and radioactive waste disposition) that can most readily be accelerated. These activities have an established regulatory framework and proven technologies.

Due to the environmental, safety, and health risks of EM legacy waste, EM's programmatic activities are monitored by various Congressional, State, and community stakeholders. Tracking and communicating progress to stakeholders is an important mechanism for allowing our stakeholders to validate and verify program performance.

Key challenges and constraints associated with the goal include an aggressive schedule (EM has targeted the end of FY 2011 for the expenditure of 90 percent of ARRA funds and to have not more than 10 percent of its authorized projects remaining for completion in FY 2012); constraints in flexibility on re-apportioning funds (ARRA mandates that all funds be obligated by September 30, 2010); and the availability of commercial options for mixed low-level waste and low-level waste treatment and disposal.

Key Strategies

- Utilize $6 billion from the American Recovery and Reinvestment Act.
- Work with regulators and stakeholders to ensure compliance and timely implementation of required cleanup actions.
- Focus on safe completion of EM activities (transuranic waste, low-level waste, soil and groundwater, and D&D) resulting in reduced environmental risks to the community.

[7] EM manages 35 square miles of property at sites other than Hanford and Savannah River, and the four small sites slated for completion by FY 2011. Footprint reduction is occurring at the other sites; however, none of those locations will result in completion of all EM responsibilities or significant reductions in square miles by FY 2011.
[8] GE Vallecitos was completed in FY 2010.

Key Success Indicators

- Reduce the active EM footprint from 931 to approximately 560 square miles by the end of FY 2011 leading to approximately 90 square miles by the end of 2015.
- Deliver on our compliance commitments (acceleration of 46 milestones by the end of FY 2011).
- Accelerate the legacy cleanup at BNL, SLAC, and SPRU to allow completion by the end of FY 2011.

How We Do It – Management Goals

Goal 5. Improve safety, security and quality assurance towards a goal of zero accidents, incidents, and defects.

EM is committed to conducting quality work in a safe and secure manner. Safety is our first priority—long-term experience in the nuclear field has shown that a safe workplace is also a productive workplace. Based upon standard safety performance measures, DOE's safety record is better than Department of Labor reported performance for the comparable industries (construction and waste disposal industries); despite the hazardous nature of EM program work. While the rates for the safety performance measures remain low, EM continues to look for innovative ideas to maintain an improving safety performance posture for all occupational, nuclear and facility safety hazards.

Under the principles and constructs of Integrated Safety Management (ISM), EM has established mature processes that cost effectively accomplish the cleanup mission while maintaining a workplace protective of the public, environment, and the workforce. EM will strengthen/forge partnerships with industry to further improve these mature processes, e.g., EM participation in the Federal Workshop on Risk Assessment and Safety Decision Making held in September 2010.

This goal requires collaborative efforts of EM Headquarters and Field to ensure timely and meaningful Federal operational awareness and collaborative technically credible interaction with the contractors. This will result in continuous improvement of safety, security and quality assurance throughout the EM complex. Trends in safety, security and quality assurance data, including lessons learned, will be assessed to identify emergent issues and conditions that require management attention. Where appropriate, EM will use existing tools and processes (e.g., Technical Authority Board) to take full advantage of resources currently applied to areas of safety, security and quality assurance.

EM maintains ISM System Descriptions and quality assurance (QA) plans that are up-to-date, responsive to EM's corporate requirements and expectations, and responsive to lessons learned. On an annual basis, the Field offices self-assess the effectiveness of ISM systems and QA programs and provide the results in an annual ISM System Declaration. In addition, EM provides annual guidance on establishing and measuring progress made on ISM and QA performance objectives, measures, and commitments. These are designed to promote continuous improvement and exceed DOE/EM established goals. Each EM site has begun implementation

of a site-specific Quality Assurance Program (QAP) that is graded to the complexities and risks associated with its mission. The QAPs have strengthened the stability and clarity of EM's QA expectations. Each EM site has committed to self-assess the effectiveness of their QAP using consistent corporate QA performance objectives and criteria. EM will analyze safety and quality performance indicators that are applicable to the variety of operations found at EM sites and that can be adopted, at each level of organization, to define lessons learned and identify emergent issues/conditions that require management attention.

EM interacts closely with Defense Nuclear Facilities Safety Board (DNFSB) members and their staff. We closely track actions to resolve issues identified in DNFSB letters and recommendations. In addition to the regular interactions between EM personnel and DNFSB staff, EM senior management, led by the Assistant Secretary, meets with the Board monthly to address safety and quality issues that are of interest to the Board. EM will use periodic interactions with the Field to ensure we are effective in anticipating potential DNFSB interest areas and keeping the Board abreast of actions taken to resolve issues. The EM Technical Advisory Board and other means will be used to facilitate issue resolution where Headquarters assistance is necessary to ensure consistency between EM sites or to clarify policy questions related to safety, security or QA. Lastly, EM-20 is performing a CY 2010 assessment of how annual ISM systems validations could be used in evaluating DNFSB advice for discernable trends.

EM maintains ISM System Descriptions and QA plans that describe safety and QA processes and how these processes are integrated to perform work safely. ISM has matured and changed to reflect the experience and lessons learned through nearly 15 years of implementation at the Department of Energy. The first key strategy under this goal is partly directed at defining a suite of proactive performance indicators that can be applied on a contract-by-contract basis. To retain our focus on safety management systems, EM will develop a more concise statement of ISM that is consistent with a matured process defined within the Directives System.

Field Managers review and accept the safety risks that high-hazard operations may pose toward workers and the public; however, without an updated risk assessment policy and associated requirements and guidance, EM lacks a strong basis for defending the results from quantitative risk assessments performed for its defense nuclear facilities. This was the premise upon which the Secretary of Energy approved the *Implementation Plan for DNFSB Recommendation 2009-1, Risk Assessment Methodologies at Defense Nuclear Facilities.*[9] EM has taken, and will maintain, a leadership role with implementation of that plan.

[9] *Implementation Plan for DNFSB Recommendation 2009-1, Risk Assessment Methodologies at Defense Nuclear Facilities*, http://www.hss.energy.gov/deprep/2009/AttachedFile/tb09N03a_att.pdf

Key Strategies

- Ensure that EM sites and projects integrate safety, security and quality, and evaluate performance indicators that measure these functions, throughout the applicable life-cycle including procurement, design, engineering, construction, commissioning, operation, deactivation/decommissioning, and environmental restoration.
- Use sound science and engineering along with developing a proactive relationship with the DNFSB to expeditiously resolve Board concerns and issues.
- Ensure EM Headquarters and Field elements continue to identify and deploy strategies and approaches that guarantee strong safety and security cultures are in place, such as Human Performance Improvement, performance and vulnerability assessments, and enhancement of the self-assessment process, focusing improvement efforts on areas of poorest performance.
- Employ a risk-based decision-making process for operation and decommissioning of EM facilities.

Key Success Indicators

- Maintain an EM average Total Recordable Case (TRC) Rate of <1.3 and a Days Away from Work, Restricted Work or Transfer (DART) Case Rate of <0.6.
- Generate data on a contract-by-contract basis using a suite of performance indicators that can be evaluated for discernable trends.
- Achieve and maintain zero cases where poor quality assurance practices by vendors, subcontractors, and prime contractors results in the installation of defective equipment or software within EM nuclear facilities.
- Maintain zero overdue action items resulting from DNFSB letters or recommendations, as identified in the DOE Safety Issues Management System.
- Develop a concise statement that defines EM's ISM vision that can be used to improve the effectiveness and focus of EM's annual ISM validation.
- Develop an interim EM risk-informed decision-making policy and associated requirements and guidance, by the end of FY 2011.

Goal 6. Improve contract and project management with the objective of delivering results on time and within cost.

EM is committed to sound contract and project management. Over the past several years, EM has placed a priority on improving program performance. This includes supporting completion of several internal and external reviews, committing to establishing a best-in-class reform initiative, and making substantive changes to management systems and organizational structures. The internal and external reviews of the EM program have produced recommendations associated with the following: developing and improving policies, protocols, guidance, and web information for EM contract and project management; developing and improving tracking systems, project and contractor performance data quality, and project outcomes; improving Federal oversight of contracts and projects; and improving processes and documentation of project Critical Decisions, award of new contracts, and managing contract changes.

In 2006, NAPA recommended significant structural and organizational alignment improvements in acquisition as well as project management. In February 2007, EM partnered with the U.S. Army Corps of Engineers and implemented improvements in project controls, baseline management, cost estimation, change control, schedule management, acquisition strategy and planning, contract change order management, and business clearance reviews. In February 2008, the EM Quality Assurance Corporate Board was chartered as the natural progression from the EM Quality Assurance Initiative begun in 2007. While the QA initiative is addressed more fully under Goal 5, it is also a key component for successful and sustained execution of these Goal 6 activities.

Through these efforts and others, EM is seeking to be removed from the GAO High-Risk List for its large capital asset construction projects. The Department's senior leadership remains fully committed to improving contract and project management across the Department and has challenged all Departmental organizations to get off the GAO High-Risk List. Only an integrated and sustained effort of continuous progress will demonstrate to GAO, Congress, and the Office of Management and Budget (OMB) that EM is a high performance organization striving to achieve excellence. Recently initiated discussions and dialogue with GAO are focused on demonstrating through transparency and accountability that EM has committed to show progress and achieve results, so that EM is removed from the High-Risk List.

Articulating clear policies and establishing standard practices on how we procure work, how we measure performance, and how we hold contractors accountable can bring clarity for contractors and employees on our expectations for excellence. Ensuring that our Contracting Officers and Federal Project Directors are trained to think and act as investors, strategists, developers, and contract (rather than contractor) managers, will improve their oversight capability. Implementing partnering arrangements with contractors as used by other Federal agencies can create win-win scenarios by opening communication channels where both parties understand and respect the rules of engagement and build better business relationships. Such relationships help shift the focus to achieving desired outcomes instead of finding mistakes, and strengthen the owner role of Federal managers without compromising the expectation of performance and accountability from the contractor. By establishing a management goal aimed at improving contract and project management, EM as an organization and individuals within EM will be able to focus and align performance standards that drive day-to-day work and decision-making that will lead to sustained improvements.

Starting projects pre-maturely when there were many unknowns has contributed to poor performance in the past. EM is firmly committed to demonstrating we are responsible stewards of taxpayer dollars and to correcting these previous deficiencies.

Key Strategies

- Use the EM Contract and Project Management Corrective Action Plan as a starting point and create an internal quality assurance process that will lead to successful and sustained execution of EM contract and project management improvements.
- Improve and expand the use of independent contract and project reviews, construction project reviews, peer reviews, and external independent reviews to keep contracts and

projects aligned and on track. Conduct verification and validation reviews to ensure that performance data is credible and reliable.

- Strengthen the integration of acquisition and project management processes so that contract statements of work and deliverables are based on clear project requirements, robust front-end planning and risk analysis, ensuring that nuclear safety requirements are addressed early, and changes to contract and project baseline and the contract are managed through strict and timely change control processes.
- Complete restructuring of the EM cleanup projects into smaller, more definitive capital projects and non-capital operations activities. Adhere to DOE Order 413.3A[10] for planning and execution of capital assets and follow the same discipline for managing the non-capital asset operations activities, e.g., establishing approval authorities, performance goals and metrics, project director designation, and change control procedures.
- Become a stronger owner by holding contractors accountable and pursue partnering relationships to create win-win scenarios, where both the Federal staff and contractor staff understand and respect the rules of engagement and build better business relationships. Also, build stronger relationships with oversight organizations to improve communications and demonstrate transparency and accountability in EM's contract and project management.
- Develop EM-specific cost estimating policy, guidance, historical cost databases, and expertise to improve our ability to perform Independent Government Cost Estimates as well as Independent Cost Reviews and validation of contractor-generated cost estimates.
- Invest in personnel development by providing training and career development in contract and project management.
- Make effective use of small and minority owned businesses.

Key Success Indicators

- Obtain EM removal from the GAO High-Risk List.
- Complete 90 percent of capital asset projects within 10 percent of original cost and schedule performance baselines unless otherwise impacted by a directed change.[11]
- By 2010, fully deploy the Project Assessment and Reporting System (PARS-II) to capture accurate and comprehensive data on DOE's capital asset projects. (Maintain at least 98 percent of project performance data reporting in IPABS/PARS II error free.)
- By 2011, conduct Independent Estimates for all major systems projects prior to CD-2.
- Approve contract performance baselines within 180 days from contractor's final accepted submission.
- Finalize 80 percent of change orders within 180 days.
- Project changes that require contract modifications are negotiated in advance of Acquisition Executive approval.

[10] *Program and Project Management for the Acquisition of Capital Assets*, July 28, 2006, https://www.directives.doe.gov/directives/current-directives/413.3-BOrder-ac1/view?searchterm=None

[11] Directed Change: Changes, caused by DOE Policy Directive, Regulatory, or Statutory action. Directed changes, with the exception of policy directives, are changes that are caused by entities external to the Department, to include external funding reductions. (Directed change decisions will be reviewed and validated by OMB periodically.)

- Ensure life-cycle costs for the current EM program portfolio do not increase unless there is new work scope.
- Implement partnering agreements for all major contracts.
- Increase the percentage of projects with certified Federal Project Directors and certified contract specialists at the appropriate level.
- Achieve EM overall prime contract small business goals.

Goal 7. Achieve excellence in management and leadership, making EM one of the best places to work in the Federal Government.

Of all goals, this is one of the most challenging as we all have our own perspectives on what makes EM one of the best places to work in the government. To realize this, each individual will have a "seat at the table" to contribute to achieving this goal.

It will involve examining EM's management practices from an external as well as internal perspective. Understanding just how well we are performing now is a necessary first step towards improvement. The basic approach to reaching this goal is to examine the available organizational reviews and surveys that assess EM and other Federal agencies and design a program for continuous improvement based on the current state of EM relative to this goal.

To fully realize the benefits of our new business model, EM is strengthening its leadership capabilities in visioning, sense-making, relating, and inventing and will focus on those attributes typically associated with management excellence: leadership, planning, performance tracking, work/business processes, customer service/relations, and accountability. One tool leadership will be using is the application of techniques associated with X-Teams designed to improve teamwork results.

Employee surveys provide a useful tool in measuring worker satisfaction and can help EM become an employer that can attract and retain the caliber of talent required to carry out its highly technical mission. Each year, DOE participates in the Employee Viewpoint Survey (EVS) administered by the Office of Personnel Management (OPM). This survey assesses the employee's satisfaction with leadership policies and practices; work environment; rewards and recognition for professional accomplishment, and personal contributions to achieving organizational mission; opportunity for professional development and growth; and opportunity to contribute to achieving the organizational mission. EM employees have identified leadership, culture, and communication as low-scoring areas that need particular attention. Management will focus on those workplace attributes that employees care about the most. Current initiatives include 360-degree evaluations of managers and executives based on input from employees as well as peers, stakeholders, and others that provide targeted survey information important to that individual's improvement in management and leadership skills.

In addition, the Partnership for Public Service (PPS) and American University's Institute for the Study of Public Policy Implementation use data from OPM's survey to rank agencies and subcomponents on a Best Places to Work index score, which measures overall employee

satisfaction, an important indicator of employee engagement and productivity. Agencies and subcomponents are scored in 10 workplace environment "best-in-class" categories such as effective leadership, employee skills/mission match, and work/life balance. DOE ranked 19th in 2009 and fell to 22nd in 2010 out of 31 large Federal agencies. EM will use this scoring to identify and benchmark the best-in-class Federal agencies while providing an important annual indicator towards improving employee satisfaction.

External and internal reviews are another source of important information in our pursuit of this goal. For instance, in December 2007, NAPA concluded a comprehensive 19-month interactive management review of the EM program, which examined the areas of organization and management, human capital, acquisition, and project management. EM leadership strongly supported the proposals NAPA provided throughout the review. At the conclusion of the review, NAPA stated, "The Panel is optimistic that with the changes underway, EM is on a solid path to becoming a high-performing organization. With the Department's support, it needs to ensure that it has the resources necessary to turn this opportunity for organizational improvement into reality."

In its leadership role, EM is committed to supporting the energy, environment, and transportation policies as required by the Energy Policy Act of 2005, the Energy Independence and Security Act of 2007, and Executive Order (EO) 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*. DOE has responded with its Strategic Sustainability Performance Plan (SSPP)[12]. Issued in September 2010, the plan sets forth a strategy to build on DOE's progress to date and achieve ambitious greenhouse gas emission reduction goals while improving energy efficiency, water conservation, waste reduction and sustainable acquisition. The SSPP holds the Under Secretaries accountable for achieving sustainability goals within their organizations and institutes internal sustainability scorecards to assess the level of success at each level of the Department (individual sites, programs, and Under Secretary).

Key Strategies

- Benchmark best-in-class agencies (the Nuclear Regulatory Commission ranked number one in this year's PPS survey) and develop improvement plans in the areas of leadership, planning, performance tracking, work/business processes, customer service/relations, and accountability.
- Utilize the Federal EVS, the PPS Survey, and follow-up targeted surveys such as 360-degree evaluations to address those attributes of management and leadership that EM must direct particular attention to if it is to become best-in-class in the Federal Government.
- Create an EM Continuous Improvement Program that incorporates all lessons learned from previous oversight reports to improve the efficiency and effectiveness of EM operations.
- Establish sustainability goal targets.
- Support DOE corporate management improvement initiatives.

[12] *DOE Strategic Sustainability Performance Plan,* http://www.energy.gov/media/DOE_Sustainability_Plan_2010.PDF

Key Success Indicators

- Reduce our average time-to-hire by accelerating the program's review of all hiring actions.
- Develop a Continuous Improvement Program and performance improves as measured through regular reviews.
- Based on the EVS working group recommendations develop and implement a plan designed to improve EM's year-to-year survey results.
- Sustainability scorecards meet or exceed goal targets.

Measuring Progress and Accountability

Measuring progress and accountability includes analyzing the expected benefits of the programs included in the performance budget request to Congress; tracking, reporting, and analyzing performance measurement data; conducting in-depth evaluations of programs; and providing results of analyses and evaluations for use in planning and allocating resources. EM's analyzing and evaluating processes involve all parts of the organization. Performance measurement data includes performance measures in the DOE budget, performance-based contracts, and performance data related to EM financial operations, human resources, facilities, and customers. Analysis of performance data includes whether goals were achieved, verification and validation of performance levels, and external factors that may have influenced performance. Performance information is tracked and reported throughout the year, with year-end results reported in DOE's Annual Performance Report (APR)[13] and in other EM Program evaluations. In addition, EM develops corrective action plans and generates reports for those items where reported performance does not meet commitments. This information is required quarterly in the Department's corporate metrics database and EM's Integrated Planning, Accountability, and Budgeting System (IPABS), and annually in the APR.

Project Baselines

The EM mission is implemented using project (capital) and program (operating) baselines to show how individual EM projects/programs contribute to overall completion of site cleanup. EM previously defined projects at higher level Project Baseline Summaries (PBS) which included both capital and operating scopes of work. These PBSs were redefined into lower level capital projects and operating activities to better define scope, manage the work, and report progress. This redefinition was completed in June 2010. Capital projects continue to be managed according to DOE Order 413.3A; however, EM prepared and implemented a Protocol for the Management of Operating Activities in April 2010, which proscribed a more traditional approach to managing operations, based on performance metrics.

EM Headquarters establishes the policies and programmatic strategies to meet the EM mission, while the Field is responsible for incorporating the EM mission, policies, and strategies into its

[13] *DOE Annual Performance Report,* http://www.mbe.doe.gov/CF1-2/2009APR.PDF

planning, budgeting, implementing, and analyzing and evaluating activities. In an effort to bring EM more in line with the intent of American National Standards Institute (ANSI) 748 for organization of work, EM developed and implemented a Corporate Work Breakdown Structure (WBS) in August 2010, which will be used to link budgeting, project management, and strategic planning and alternatives analysis. Level 4 of this WBS will be the interface between the corporate planning and management structure and the site-level work breakdown structure.

Baselines define the planned scope, schedule, and cost for each EM project/program, and provide a basis for managing and measuring performance. Baselines also describe the current estimate of the scope, schedule, and costs for each site to complete the cleanup program. The baseline includes workscope for which EM has made key site cleanup decisions pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, the Resource Conservation and Recovery Act, the National Environmental Policy Act, or other statutes, and workscope where EM has yet to make such decisions. Sound baselines support the preparation of defensible budgets, development of meaningful performance measures and contract incentives, and the establishment of accountability, as well as provide a basis for controlling scope and cost growth.

The Field typically maintains the project baseline as a collection of documents, cost-loaded schedule networks, cost estimates, and documented assumptions. The Field develops the specific content of EM baselines. Baselines are independently validated, with Headquarters in the lead and participation by the Field. After validation, EM maintains the baselines under configuration control. Headquarters approves the critical decisions for the projects and approves appropriate baseline changes at levels defined by the configuration control procedures. In select cases, the authority to approve critical decisions and change actions is delegated to field executives.

Performance measures and key milestones are defined as part of the baseline. The Federal Project Director, with the assistance of the contractor, defines the major performance metrics required for management and control of the project. EM Corporate Performance Measures along with performance measures required by the contractor to implement the contractor's management system are incorporated into project baseline documentation.

Performance Measurement, Tracking, Evaluation System

Project managers conduct comprehensive evaluations of their projects/programs, supported by analysis and by objective reviews and recommendations done by panels of experts (merit review/peer review). The frequency, regularity, scope, and breadth of independence of these reviews depends on the nature of the work, the degree of technology change or evolution, the performance and results, and interest among stakeholders. Results of these reviews help complete the program management cycle by feeding forward into the next planning and budget cycle.

Monthly reports provide a forum for the discussion of program progress to EM management along with required status reports from the Field. The EM Budget Office performs monthly reviews to provide a financial perspective on funding status. In addition, Field sites provide a

mid-year budget execution briefing to EM Headquarters on their funding/expenditure rates to provide early insight into financial trends potentially resulting in the need for reprogramming, work slowdown, or other corrective actions. Large projects report their progress during Quarterly Project Reviews.

EM continuously evaluates the systems it relies on to facilitate the management of its projects. The program is currently using IPABS as a performance-based approach to meet information management needs, and to support other core business processes. IPABS supports the standardized application of EM's project management practices. EM uses IPABS to interface with DOE and other Federal agency systems, such as the Office of Engineering and Construction Management's Project Assessment and Reporting System (PARS), and the Central Internet Database. With the rollout of PARS II, IPABS will pull necessary capital project baseline and performance data from it to avoid having the Field enter the same data twice. Use of IPABS reduces redundancy and the need for individual information requests. IPABS streamlines access to EM information, and addresses how EM implements program responsibilities established in DOE Order 430.1, *Real Property Asset Management*,[14] as well as other DOE and OMB program management guidance.

Annual Performance Agreement with the Assistant Secretary

The Performance Agreement documents EM's final annual performance commitments after the Congressional budget appropriation process. It establishes aggressive annual fiscal year-specific commitments and measures related to the goals and strategies contained in the Roadmap for EM's Journey to Excellence. The Performance Agreement is signed by EM's leadership team and is their collective commitment to each other and the EM organization at large as to what will be accomplished for the given fiscal year. Appropriate commitments will be incorporated into individual manager's performance review standards.

To maintain focus, a sense of urgency, and to have a real impact on performance, there will be periodic reviews of progress, discussion of difficulties encountered, and agreement on appropriate actions. These reviews will be held between the Assistant Secretary and/or her designees and EM managers.

Employee Performance Standards

Accountability for performance and results ultimately resides at the individual (both supervisory and non-supervisory) employee level. To hold managers accountable for accomplishing EM's goals and objectives, performance measures and commitments are reflected in Headquarters, Field Manager, and employee performance elements, standards, and subsequent evaluations (in accordance with DOE Order 331.1B, *Departmental Employee Performance Management System*.[15] Managers review employee performance in accordance with applicable rules,

[14] DOE Order 430.1, *Real Property Asset Management*, https://www.directives.doe.gov/directives/current-directives/430.1-BOrder-bc1/view?searchterm=None
[15] DOE Order 331.1B, *Departmental Employee Performance Management System*, https://www.directives.doe.gov/directives/archive-directives/331.1-BOrder-b/view

personnel policies, and union agreements. Performance should be measurable, accountable, and traceable to performance plans, objectives, and commitments. Managers conduct annual reviews with a formal mid-point review and final review of the preceding year's performance at the completion of the performance cycle.

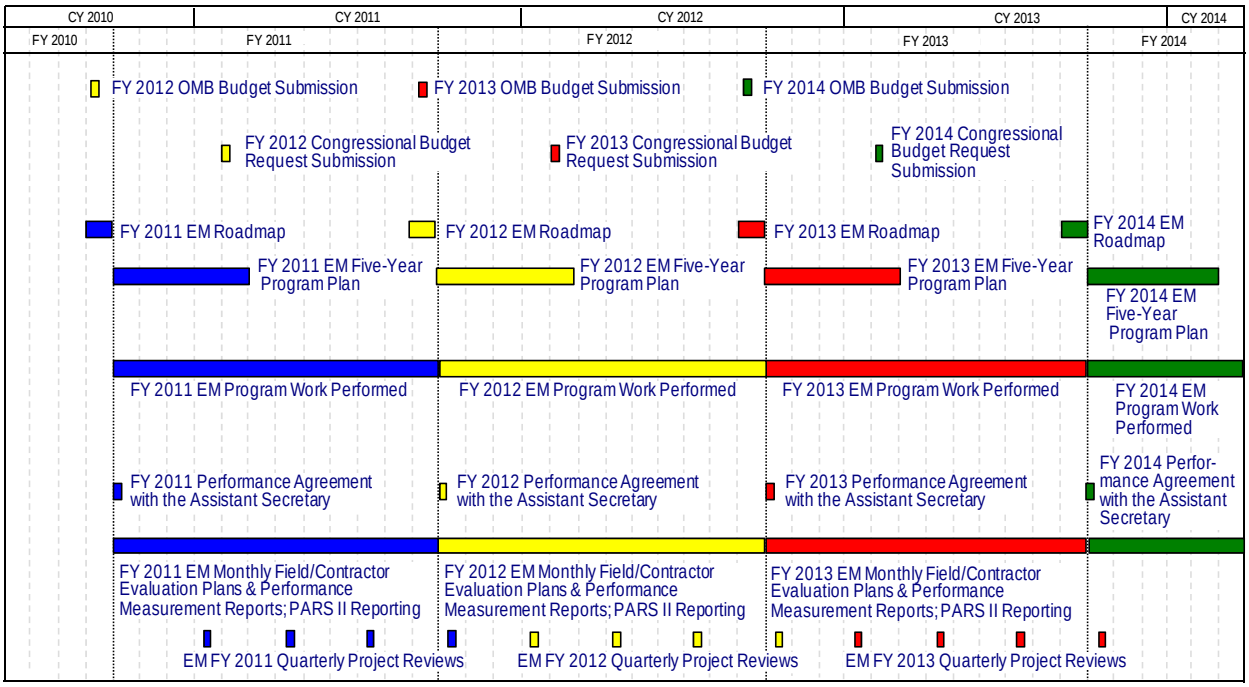
Updating the Roadmap

This document represents EM's program strategy. The specific details of how EM will achieve its goals and objectives are described in the multi-year program plan, operational plans, and budgets prepared by the program offices and laboratories. Success will be measured against performance indicators in this Roadmap, the Annual Performance Agreement with the Assistant Secretary, performance-based contracts, and other performance tracking documents.

A calendar of EM's key planning and budgeting efforts and their relationship with the OMB and Congressional budget processes is shown below. During any given year, EM is addressing planning, budgeting, and program evaluation activities that span four separate fiscal years.

This Roadmap represents work in progress. The future will be different than we picture it today, with new technologies, new laws, new barriers, and new opportunities. It is essential that we anticipate and accommodate such change. Strategic planning is therefore a continuous process; our plan will be reviewed at least annually and revised as appropriate.

EM Planning, Budgeting, and Evaluation Multi-Fiscal Year Key Activities



[Page intentionally left blank]

[Inside back cover]

Contact Information

The Office of Environmental Management's Roadmap for the Journey to Excellence serves as the foundation for both our daily decision-making and long-term goals. We welcome the views and suggestions of individuals and organizations that have an interest in our program. Please send comments to the following address:

U.S. Department of Energy
ATTENTION: Office of
Environmental Management
1000 Independence Ave., SW
Washington, DC 20585

Phone: (202) 586-7709
Fax: (202) 586-7757
Email: EMRoadmap@hq.doe.gov

U.S. Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-0121

Visit DOE's Websites

- U.S. Department of Energy
  http://www.energy.gov/
- Environmental Management
  http://www.em.doe.gov/Pages/EMHome.aspx
- Office of Legacy Management
  http://www.lm.doe.gov/home.aspx
- Office of Nuclear Energy
  http://www.ne.doe.gov/
- Office of Science
  http://www.sc.doe.gov/
- National Nuclear Security Administration
  http://nnsa.energy.gov/
- Office of Energy Efficiency and Renewable Energy
  http://www.eere.energy.gov/
- Office of Fossil Energy
  http://www.fossil.energy.gov/
- Office of Electricity Delivery and Energy Reliability
  http://www.oe.energy.gov/
- Office of Health, Safety and Security
  http://www.hss.doe.gov/
- Congressional and Intergovernmental Affairs
  http://congressional.energy.gov/
- Office of Inspector General
  http://www.ig.energy.gov/

Other Relevant Sites

- The Whitehouse
  http://www.whitehouse.gov/
- USA.gov
  http://www.usa.gov/index.shtml

[Back cover]
[Page intentionally left blank]

FY 2011

Annual Performance Agreement with the Assistant Secretary

U.S. Department of Energy
Office of Environmental Management

Revision 0 – December 16, 2010

[Inside cover]

Page left intentionally blank.

Office of Environmental Management
Performance Agreement with the Assistant Secretary

Overview

The Office of Environmental Management (EM) is working to complete the safe cleanup of the environmental legacy brought about from five decades of nuclear weapons development and government-sponsored nuclear energy research. For FY 2011, EM's commitments advance the program and management goals, priorities, and expectations of Assistant Secretary Inés Triay and move us toward a more efficient and effective organization. We have begun the difficult task of developing and implementing a new business model that reflects a management philosophy of empowering the Field with the authorities and resources necessary to successfully execute the EM Program mission. This business model also supports EM leadership's vision of creating an enduring management model that normalizes and enhances EM's ability to function as a high-performing organization. The expectation is that EM will perform at such a high level that the Government Accountability Office removes it from the list of high-risk organizations. This new business model will be a major step forward in achieving this goal.

Building on Our Success

Since the start of the EM organization in the late 1980s, we have accomplished much for the Nation in fulfilling our cleanup mission. In FY 2011, we will continue to build on our progress by improving our safety performance; realigning the Headquarters/Field authorities and resources; improving project performance; achieving excellence in leadership; and establishing strategic options for the EM portfolio.

Improving Our Processes

With the new business model, we are improving the measures for these commitments. They are more specific, quantified, and meaningful for managers, employees, and stakeholders. This agreement is the commitment by the Environmental Management leadership team to turn resources into results. We will continually improve EM as we create an organization that works better and costs less.

EM's primary responsibility is the safe cleanup of the environmental legacy. It is the purpose for which Congress established the EM Program. Programmatic success will be measured by *what* is accomplished, i.e., the number of sites restored, quantities of material treated and disposed of, amounts of soil and groundwater remediated, etc. However, overall success will also be measured by *how* the program is managed, i.e., through critical management goals such as safety performance, project and contract management, and excellence in business management practices and leadership.

Mission

To safely transform the environmental legacy into assets available for the Nation's future by completing quality cleanup work on schedule and within cost, delivering demonstrated value to the American taxpayer.

Vision

To be viewed as one of the best managed government programs and the employer of choice in the Federal Government.

Principles and Values

In February 2010, Secretary of Energy Chu issued seven management principles to guide the Department of Energy in fulfilling its mission and in its daily operations. The Office of Environmental Management has fully embraced these principles.

1. Our mission is vital and urgent.
2. Science and technology lie at the heart of our mission.
3. We will treat our people as our greatest asset.
4. We will pursue our mission in a manner that is safe, secure, legally and ethically sound, and fiscally responsible.
5. We will manage risk in fulfilling our mission.
6. We will apply validated standards and rigorous peer review.
7. We will succeed only through teamwork and continuous improvement.

In addition to the Department's Management Principles, the Office of Environmental Management has developed a set of core values that serve as the "rules of the road" on our journey to excellence.

1. We care about our mission, have a sense of urgency in the pursuit of our goals and a desire for quality in our work.
2. We demonstrate accountability by taking ownership, meeting our commitments, and admitting our mistakes.
3. We acknowledge and reward individual and team successes.
4. We talk directly and honestly to each other to resolve conflict in a timely and respectful manner.
5. We communicate clearly and concisely and check for understanding.
6. We ask for help when we need it and we look for ways to help each other succeed.
7. We have a questioning attitude and pursue issues until a decision is made.

Program-Related Commitments

EM continues to pursue its cleanup objectives within the overall framework of achieving the greatest risk reduction benefit per radioactive content and overlaying regulatory compliance commitments and best business practices to maximize cleanup progress. To support this approach EM has prioritized its cleanup activities:

- Essential activities to maintain a safe, secure, and compliant posture in the EM complex
- Radioactive tank waste stabilization, treatment, and disposal
- Spent nuclear fuel (SNF) storage, receipt, and disposition
- Special nuclear material (SNM) consolidation, stabilization, and disposition
- Transuranic (TRU) and mixed/low-level waste (M/LLW) disposition
- Groundwater and soil remediation
- Excess facilities deactivation and decommissioning (D&D)

Under each of our Program Goals, EM has established strategies that address our most significant goals. Under each strategy, and consistent with our budget for FY 2011, we have established "measures of success." In this FY 2011 Agreement, we have set forth a total of 21 program-related strategies and 15 measures of success.

The following Program Goals, strategies and metrics are our commitments for FY 2011 as we strive to raise the level of our overall performance. In several instances our metrics go beyond the levels defined in our individual performance plans and are intended to stretch the organization and develop a team commitment to EM's strategic goals. Where indicated, a few of the particularly demanding metrics are expressed as ranges with the intent to bound meeting versus exceeding expectations.

Goal 1. Complete the three major tank waste treatment construction projects within the approved baselines.

- Work with the Federal staff, contractors, and union representatives to ensure that the projects have the necessary tools (such as technology resources, innovative tools to maintain motivation, and a strong owner's presence) to succeed in the most efficient manner.
- Partner with national laboratories, industry, academia, and the Corps of Engineers to ensure the best scientific and engineering resources are used, so that the technologies selected for development and deployment and the design and construction approaches used will help reduce risk, lower cost, and accelerate project completion.
- Establish an integrated design/engineering testing and commissioning framework across the EM complex to support project teams and enhance technical decision-making.
- Use the Code of Record concept to only make project changes that are essential to project success.
- Use Construction Project Reviews (CPRs) to identify and assist in resolution of key project issues related to scope, cost, schedule, project risk management, and technical approach.

- Ensure the contract fee is aligned with completion of each capital asset.

Success will be measured by:

FY 2011 Metric 1.1: *Project cost and schedule performance indices between 0.9 and 1.15.*

FY 2011 Metric 1.2: *Ninety (90) percent of CPRs are performed as scheduled and demonstrate continuous improvement in the severity and impact of CPR recommendations.*

FY 2011 Metric 1.3: *Ninety (90) percent of Corrective Actions associated with recommendations identified in CPRs are finished within six months of the completion of each CPR.*

FY 2011 Metric 1.4: *Interim success parameters, including schedule milestone metrics for each project, are developed by 12/30/10, and are evaluated monthly and used to predict project success.*

Goal 2. Reduce the life-cycle costs and accelerate the cleanup of the Cold War environmental legacy.

- Develop an R&D roadmap for the development and application of advanced modeling and simulation tools to accelerate progress on EM challenges in 2011.
- Engage the Department's basic and applied research capabilities to develop novel methods for addressing high-level waste that can accelerate progress and reduce costs of this multi-decadal program.
- Prioritize the technology development and deployment (TDD), base, and applicable Recovery Act funds to best achieve this goal.
- Integrate and manage the TDD investment and insert technologies at appropriate maturity.
- Continue to use the National Academy of Sciences, Environmental Management Advisory Board, EM Technical Experts Group, and the expertise of EM Federal staff to inform us on how best to achieve reductions in the life-cycle cost for the tank waste mission.
- Provide Blue Ribbon Commission (BRC) information and cost benefits based on current plans and potential improvements.
- Use appropriate system planning models to demonstrate the benefit of deploying state-of-the-art technologies and/or more effective strategies in order to reduce the life-cycle cost of the tank waste cleanup mission.

Success will be measured by:

FY 2011 Metric 2.1: *The Enhanced Tank Waste Strategic Investment Portfolio (ETW-SIP) is developed by 9/30/11, consistent with EM's long-term vision to accelerate the*

cleanup schedule by six years at Savannah River Site (SRS), reducing environmental liability/life-cycle costs by $3 billion at SRS.

FY 2011 Metric 2.2: *The Enhanced Tank Waste Strategic Investment Portfolio (ETW-SIP) is developed by 9/30/11, consistent with EM's long-term vision to accelerate the cleanup schedule by seven years at Hanford, reducing environmental liability/life-cycle costs by $16 billion at Hanford.*

FY 2011 Metric 2.3: *Ensuring budget planning such that both Hanford and SRS baselines reflect the new transformational technologies required to support the ETW-SIP by 9/30/11.*

FY 2011 Metric 2.4: *Ensuring that requirements and appropriate baseline planning at Hanford and SRS are complete by 6/30/11 to support the ETW-SIP using new transformational technologies.*

FY 2011 Metric 2.5: *By 9/30/11, developing and utilizing EM's strategic planning tools to identify the benefits of deploying state-of-the-art technologies and/or more effective strategies to reduce the life-cycle cost of the tank waste cleanup mission.*

Goal 3. Complete disposition of 90 percent of legacy TRU waste by the end of 2015.

- Centralize the characterization of small quantity sites' TRU waste in Idaho.
- Expand and enhance Central Characterization Program capabilities.
- Utilize shielded canisters to accelerate transportation and disposal of RH TRU wastes.
- Process and dispose of Large Box TRU, utilizing the TRUPACT-III.
- Align contract incentives at Waste Isolation Pilot Plant (WIPP) and TRU generator sites to support specific legacy TRU disposition targets each year.

Success will be measured by:

FY 2011 Metric 3.1: *Attaining a disposition rate of 6,000 to 8,000 cubic meters (meets/exceeds, respectively) of TRU waste across the EM complex by 9/30/11.*

FY 2011 Metric 3.2: *Completing the disposition of TRU waste from six to eight (meets/exceeds, respectively) of the eight small quantity sites identified in the Carlsbad Field Office (CBFO) TRU Waste Acceleration Plan by 9/30/11.*

FY 2011 Metric 3.3: *Meeting 90 percent of legacy TRU disposition related site regulatory milestones by 9/30/11.*

Goal 4. Reduce the EM legacy footprint by 40 percent by the end of 2011, leading to approximately 90 percent reduction by 2015.

- Utilize $6 billion from the American Recovery and Reinvestment Act.
- Work with regulators and stakeholders to ensure compliance and timely implementation of required cleanup actions.
- Focus on completion of EM activities (transuranic waste, low-level waste, soil and groundwater, and D&D) resulting in reduced environmental risks to the community.

Success will be measured by:

FY 2011 Metric 4.1: *Reducing the active EM footprint from 931 to approximately 560 square miles by 9/30/11.*

FY 2011 Metric 4.2: *Delivering on 90 to 100 percent (meets/exceeds, respectively) of EM's compliance commitments (acceleration of 46 milestones by 9/30/11).*

FY 2011 Metric 4.3: *Accelerating the legacy cleanup at Brookhaven National Laboratory (BNL), SLAC National Accelerator Laboratory (SLAC), and Separations Process Research Unit (SPRU) to allow completion by 9/30/11.*

Management-Related Commitments

EM continues to pursue its commitment to becoming a high-performing organization guided by its vision of excellence, core values, its Roadmap to Excellence, and the implementation of its new business model. To support this approach, EM has identified the following Management Goals, strategies, and metrics for our FY 2011 contract.

Under each of our Management Goals, EM has established strategies that address our most significant goals. Under each strategy, and consistent with our budget for FY 2011, we have established "measures of success." In this FY 2011 Agreement, we have set forth a total of 16 Management-related strategies and 18 measures of success.

Goal 5. Improve safety, security and quality assurance towards a goal of zero accidents, incidents, and defects.

- Ensure that EM sites and projects integrate safety, security and quality, and evaluate performance indicators that measure these functions, throughout the applicable life-cycle including procurement, design, engineering, construction, commissioning, operation, deactivation/decommissioning, and environmental restoration.
- Use sound science and engineering along with developing a proactive relationship with the Defense Nuclear Facilities Safety Board (DNFSB) to expeditiously resolve Board concerns and issues.
- Ensure EM Headquarters and Field elements continue to identify and deploy strategies and approaches that guarantee strong safety and security cultures are in place, such as

Human Performance Improvement, performance and vulnerability assessments, and enhancement of the self-assessment process, focusing improvement efforts on areas of poorest performance.

- Employ a risk-based decision-making process for operation and decommissioning of EM facilities.

Success will be measured by:

FY 2011 Metric 5.1: *Maintaining an average Total Recordable Case rate of <1.3 and a Days Away from Work, Restricted Work or Transfer case rate of <0.6 – 0.7 (exceeds/meets, respectively).*

FY 2011 Metric 5.2: *Attain and maintain zero cases where poor quality assurance practices by vendors, subcontractors, and prime contractors results in the installation of defective equipment or software within EM nuclear facilities.*

FY 2011 Metric 5.3: *Attain a level of zero to 20 percent overdue action items (exceeds/meets, respectively) resulting from DNFSB letters or recommendations, as identified in the DOE Safety Issues Management System by 9/30/11.*

FY 2011 Metric 5.4: *Developing a concise statement by 9/30/11 that defines EM's vision that can be used to improve the effectiveness and focus of EM's annual ISM validation.*

FY 2011 Metric 5.5: *Developing an interim EM risk informed decision-making policy, and associated requirements and guidance by 9/30/11.*

Goal 6. Improve contract and project management with the objective of delivering results on time, and within cost.

- Use the EM Contract and Project Management Corrective Action Plan as a starting point and create an internal quality assurance process that will lead to successful and sustained execution of EM contract and project management improvements.
- Improve and expand the use of independent contract and project reviews, construction project reviews, peer reviews, and external independent reviews to keep contracts and projects aligned and on track. Conduct verification and validation reviews to ensure that performance data is credible and reliable.
- Strengthen the integration of acquisition and project management processes so that contract statements of work and deliverables are based on clear project requirements, robust front-end planning and risk analysis, ensuring that nuclear safety requirements are addressed early, and changes to contract and project baseline and the contract are managed through strict and timely change control processes.
- Complete restructuring of the EM cleanup projects into smaller, more definitive capital projects and non-capital operations activities. Adhere to DOE Order 413.3A for planning and execution of capital assets and follow the same discipline for managing the non-capital asset operations activities, e.g., establishing approval authorities, performance goals and metrics, project director designation, and change control procedures.

- Become a stronger owner by holding contractors accountable and pursue partnering relationships to create win-win scenarios, where both the Federal staff and contractor staff understand and respect the rules of engagement and build better business relationships. Also, build stronger relationships with oversight organizations to improve communications and demonstrate transparency and accountability in EM's contract and project management.
- Develop EM-specific cost estimating policy, guidance, historical cost databases, and expertise to improve our ability to perform Independent Government Cost Estimates as well as Independent Cost Reviews and validation of contractor-generated cost estimates.
- Invest in personnel development by providing training and career development in contract and project management.

Success will be measured by:

FY 2011 Metric 6.1: *Completing 90 percent of capital asset projects (initiated after the DOE Root Cause Analysis report was issued) within 10 percent of original cost and schedule performance baselines unless otherwise impacted by a directed change by 9/30/11.*

FY 2011 Metric 6.2: *Maintaining at least 95 to 98 percent (meets/exceeds, respectively) of project performance data reporting in IPABS/PARS II error free by 9/30/11.*

FY 2011 Metric 6.3: *Approving 80 percent of contract performance baselines within 180 days from contractor's final accepted submission.*

FY 2011 Metric 6.4: *Finalizing 80 percent of change orders within 180 days.*

FY 2011 Metric 6.5: *Negotiating 90 percent of project changes that require contract modifications in advance of Acquisition Executive approval by 9/30/11.*

FY 2011 Metric 6.6: *Managing life-cycle costs within five percent of current EM program portfolio using FY 2011 Budget and Planning Guidance by 9/30/11.*

FY 2011 Metric 6.7: *Implementing partnering agreements for at least five major contracts by 9/30/11.*

FY 2011 Metric 6.8: *Ensuring 85 percent of contracting series workforce has appropriate certification.*

FY 2011 Metric 6.9: *Ensuring 90 percent of projects have Federal Project Directors certified at the appropriate level assigned to projects no later than Critical Decision 3.*

FY 2011 Metric 6.10: *Achieving EM overall prime contract small business goal of five percent.*

Goal 7. Achieve excellence in management and leadership, making EM one of the best places to work in the Federal Government.

- Benchmark best-in-class agencies (the Nuclear Regulatory Commission ranked number one in this year's Partnership for Public Service [PPS] survey) and develop improvement plans in the areas of leadership, planning, performance tracking, work/business processes, customer service/relations, and accountability.
- Utilize the Federal Employee Viewpoint Survey (EVS), the PPS Survey, and follow-up targeted surveys such as 360-degree evaluations to address those attributes of management and leadership that EM must direct particular attention to if it is to become best-in-class in the Federal Government.
- Create an EM Continuous Improvement Program that incorporates all lessons learned from previous oversight reports to improve the efficiency and effectiveness of EM operations.
- Establish sustainability goal targets for Field Offices and projects.
- Support DOE corporate management improvement initiatives.

Success will be measured by:

FY 2011 Metric 7.1: *Developing and implementing a Continuous Improvement Program by 3/31/11 and measuring performance through monthly reviews.*

FY 2011 Metric 7.2: *Implementing 75 percent of recommendations of the Employee Viewpoint Survey Working Group and soliciting feedback by 9/01/11.*

FY 2011 Metric 7.3: *Conducting benchmarking with best-in-class agencies by 3rd Quarter FY 2011, and performing a gap analysis and developing recommended actions to close gaps by 9/30/11.*

Measurement and Monitoring of Performance

To maintain focus, a sense of urgency, and to have a real impact on performance, there will be periodic reviews of progress, discussion of difficulties encountered, and agreement on appropriate actions. These reviews will be held between the Assistant Secretary and/or her designees and EM's management leadership. Any specific reporting requirements will be developed jointly with the EM managers.

Assistant Secretary Support

In order to accomplish the goals herein described, it is the Assistant Secretary's objective to provide visible, high profile support by:

- Ensuring that the necessary resources are in place to promote the success of these goals;
- Communicating goal achievement and progress periodically through EM Updates, EMFEDCAST and other media;
- Championing each X-Team's efforts to implement their action plans;
- Formally recognizing superior efforts in achieving goals through incentive awards; and,
- Communicating, negotiating and mitigating responses and issues with senior Department and private sector officials.

Terms of Agreement

This agreement is intended to improve the internal management of the U.S. Department of Energy's Office of Environmental Management and is not intended to and does not create any right, benefit, trust or responsibility, substantive or procedural, enforceable by law or equity by any party against the U.S. Department of Energy, its agencies, its officers, or any person. This agreement will remain in effect until modified. It is expected that it will be updated annually to reflect significant changes in budget, policy, personnel or other factors that may affect the accomplishment of objectives. This agreement represents our joint commitment to an EM that works better, costs less, and fulfills our sacred trust to the American People.

Assistant Secretary — Date 12/2/10

Principal Deputy Assistant Secretary — Date 12/4/10

Chief Operations Officer — Date 11/29/10

Chief Business Officer — Date 11/17/10

Associate Principal Deputy for Corporate Operations — Date 11/17/10

Communications & External Affairs — Date 11/23/10

Deputy Assistant Secretary, Project Management (Acting) — Date 11/19/10

Deputy Assistant Secretary Safety & Security Program (Acting) — Date 11/19/10

EM Recovery Act Program — Date 11/23/10

Technology Innovation & Development — Date 12/1/10

Deputy Assistant Secretary Technical & Regulatory Support — Date 11/19/10

Deputy Assistant Secretary Program & Site Support — Date 11/29/10

Deputy Assistant Secretary Program Planning & Budget — Date 11/18/2010

Deputy Assistant Secretary Human Capital & Corporate Services — Date 11/18/2010

Deputy Assistant Secretary Acquisition & Contract Management — Date 11/18/2010

Management Systems & Analysis — Date 11/22/2010

Manager, Savannah River Site — Date 11/29/10

Manager, Richland Operations Office — Date 11/17/10

Manager, Office of River Protection — Date 11/17/10

Manager, Portsmouth/Paducah Project Office — Date 11/17/10

Manager, Carlsbad Field Office — for E. Ziemianski — Date 11/17/10

Manager, Idaho Operations Office — Date 11/17/2010

Assistant Manager for Environmental Management, Oak Ridge Office — Date 11/17/10

Manager, Consolidated Business Center — Date 11/17/10

Corporate Board Executive Members (Federal, Voting)				
Name	**Company/Organization**	**Title**	**Phone Number**	**Email Address**
Brown, Robert	SC-Oak Ridge	Deputy Site Manager, Oak Ridge Office	865-241-0526 865-241-4444	brownrj@oro.doe.gov
Cooper, Jim	NE-Idaho	Acting Deputy Manager, ID Cleanup	208-526-5698	cooperjr@id.doe.gov
Craig, Jack	EM-Consolidated Business Center	Director, Environmental Management Consolidated Business Center	513-246-0460	jack.craig@emcbc.doe.gov
Dowell, Jonathan	DOE-River Protection	Acting Site Manager, Office of River Protection	509.376.3389	jonathan.dowell@rl.doe.gov
Edward Ziemianski	EM-Carlsbad	Acting Manager, Carlsbad Field Office	575-234-7303	edward.ziemianski@wipp.ws
Ken Picha	EM-Headquarters	Acting Deputy Assistant Secretary for Safety and Security Program	202-586-5151	kenneth.picha@em.doe.gov
Lagdon, Richard	DOE - CNS	Chief of Nuclear Safety	202-586-0799	chip.lagdon@hq.doe.gov
McCormick, Matthew	DOE - Richland	Site Manager, Richland Office	509-373-9971	matthew_s_mccormick@rl.gov
Moody, David	DOE-Savannah River	Site Manager, Savannah River Site	803-952-9468	david.moody@srs.gov
Murphie, William	EM-PPPO	Manager, PPPO	859-219-4001	william.murphie@lex.doe.gov
Murray, Bob	EM-Headquarters	Director, Office of Standards & Quality Assurance	202-586-7267	robert.murray@em.doe.gov
Corporate Board Executive Members (Senior Contractor Executives, Non-Voting)				
Barker, Norm	EnergySolutions, Inc.	Vice President, QA & ISM	610-371-0868	nrbarker@energysolutions.com
Ebner, Jerome	AREVA NP, Inc.	Director, Environmental Safety, Health, and Quality	704-805-2636	Jerome.Ebner@areva.com
Marden, Chris	Energy Solutions, Inc.	Corporate Director, QA	303-874-3964	cmarden@energysolutions.com
Mason, Mike	BNI	BNI, EFCOG ISM Working Group, QA Subgroup Lead	240-379-3581	mjmason@bechtel.com
Piccolo, Steve	WSRC	President	803-952-5953	stephen.piccolo@srs.gov
Sain, Leo	URS Washington Group	Vice President, High-level Waste Management Integration	803-502-5749	leo.sain@srs.gov
Spears, Mark	CH2M Hill	President, Nuclear Business Group	720-286-1537	mark.spears@ch2m.com
Walker, David	Bechtel National, Inc.	President	240-379-3660	dwalker@bechtel.com
Yanek, Joe	Fluor	Senior Director, ESHQ; EFCOG Chair ISM Working Group	864-281-6282	joe.yanek@Fluor.com

Corporate Board Full Members (Federal, Non-Voting)				
Armour, Don	EM-Idaho	DOE-ID QA Manager	208-526-3512	armourda@id.doe.gov
Carier, Patrick	EM-River Protection	Quality Assurance Manager	509-376-3574	patrick_p_carier@orp.doe.gov
Danielson, Bud	EM-Headquarters	Quality and Safety Management Expert	301-903-2954	bud.danielson@hq.doe.gov
Everatt, Carl	Savannah River	Acting Director, Office of Safety & QA	803-952-8379	carl.everatt@srs.gov
Hawkins, Al	EM-Richland	Quality Assurance Manager	509-376-9936 509-539-0467	albert_r_al_hawkins@rl.gov
Miehls, Dennis	Carlsbad	Acting Director, Office of Quality Assurance	575-234-7491	dennis.miehls@wipp.ws
Jackson, T.J.	EM-Consolidated Business Center	Assistant Director for Logistics Management	513-246-0077	tj.jackson@emcbc.doe.gov
Kozlowski, David	EM-PPPO	Deputy Manager	859-219-4002	david.kozlowski@lex.doe.gov
McCallister, Russ	EM-PPPO	Senior Physical Scientist	859-219-4012	russell.mccallister@lex.doe.gov
Hawks, Brenda	SC-Oak Ridge	QA Division Acting Director	865-576-2503	hawksbl@oro.doe.gov
Harrington, Paul	EM-River Protection	Acting Assistant Manager, ES&H	509-376-5700	paul_g_harrington@orp.doe.gov
Zimmerman, Jack	EM-PPPO	Federal Project Director- DUF6 Project	859-219-4017	jack.zimmerman@lex.doe.gov
Corporate Board Contractor Participants				
Name	**Company/Organization**	**Title**	**Phone Number**	**Email Address**
Almon, John	CH2M Hill	Director, Environment, Safety, Health & Quality	720-286-0216	john.almon@ch2m.com
Berman, Herb	WRPS	Chief Engineer	505-376-5325	herbert_s_berman@rl.gov
Bills, Paul	INL	Lead, INL Supplier Management Program	208 526 5726	Paul.Bills@inl.gov
Bixby, Willis	WWBX	Principal	202-624-7737	wwbx@comcast.net
Bruce, Phyllis	ATL/ Hanford	QA Program Lead	509-375-4200	phyllis_h_bruce@rl.gov
Carter, Bob	WCH Hanford	QA Project Support Manager	509-377-3220	bob.carter@wch-rcc.com
Doswell, Alice	Parsons	ESH&Q Manager, SWPF, Parsons Infrastructure and Technology Group	803-643-1676	Alice.Doswell@parsons.com
Drake, Lynne	SRS	QC Services Manager	803-952-6198	lynne.drake@srs.gov
Dumas, Elvin	Idaho BBWI	QA Programs Manager	208-557-0946	Dumaej@amwtp.inl.gov
Erpenbach, Jerry	Oak Ridge EnergX	QA Manager	865-576-1634	jerry.erpenbach@truproject.com
Fallon, Tom	Bechtel, BWXT (ID)	QA Manager, AMWTP	208-557-6344	falltf@amwtp.inl.gov
Foelber, Steve	Bechtel National, Inc. (BNI)	WTP Project, Engineering Manager for CGD	509-371-3839 509-430-3695	scfoelbe@bechtel.com
Grant, Gary	CH2M Hill Nuclear Group	Director, Quality and Safety Assurance	720-286-0387	Gary.Grant@CH2M.com

Grosso, Vince	Washington River Protection Solutions	Principal Quality Engineer	509-373-2190	vincent_j_grosso@RL.gov
Hall, Dave	URS Corporation	Project Director, Nuclear/Hazardous Waste Operations	803-502-9767	dave.hall@wsms.com
Hassell, Harold (Mike)	Washington Closure Hanford	QA Manager	509-372-9568	hmhassel@wch-rcc.com
Hawkins, Tony	SNRS	Engineering Programs Lead	803-952-9388	tony.hawk@srs.gov
Helton, Gary	Isotek Systems	QA Engineer	865-241-4513	g8y@ornl.gov
Higgins, Richard	WRPS	QA Manager	509-372-9972	richard_l_higgins@RL.gov
Hoff, Jon	CBFO Washington TRU Solutions	QA Manager	505-234-8403	jon.hoff@wipp.ws
Hoover, Clif	Fluor Hanford Inc (FH)	Senior QA Engineer	509-372-3625	clifton_r_clif_hoover@rl.gov
Hopperton, Joyce	WSI-SRS	Manager, QA Department	803-952-7335	joyce.hopperton@srs.gov
Keeling, Ricky	Paducah Remediation Services	QA Manager	270-441-5374	ricky.keeling@prs-llc.net
Kent, David	Portsmouth Lata/Parallax	QA Manager	740-897-2572	dkent@lpports.com
Kerley, William	CH2M-WG/ICP	Chief Engineer	208-533-0240	william.kerley@icp.doe.gov
Kimmerly, Susan	Oak Ridge Bechtel Jacobs	QA Manager	865-574-8242	lowesh@bechteljacobs.org
Kronvall, Charlie	Fluor Hanford/ CHPRC	Manager, Plant Engineering	509-376-9601	Charles_M_Kronvall@rl.gov
Ledford, Wayne	CBFO CTAC	Audits and Assessment Manager	575-234-7182	wayne.ledford@wipp.ws
Lewis, Larry	RSI	Quality Manager	865-405-5087	llewis@rsienv.com
Longenecker, John	Longenecker & Associates	President	702-493-5363	LongeneckerInc@aol.com
Longpre, Dan	Portsmouth Theta Pro2Serve	QA Lead	740-897-5747	longpred@tpmclic.com
McEahern, Patrice	Shaw Environment & Infrastructure, Federal	VP, ESHQ	720-554-8289	patrice.mceahern@shawgrp.com
Milazzo, Robert	Tetra Tech	Senior Vice President	865-483-7007	Robert.Milazzo@tetratech.com
Nesser, Cathy	Washington TRU Solution	Lead Program Improvements	505-234-8376	cathy.nesser@wipp.ws
Nicol, Michael	Isotek Systems	Quality Manager	865.574.2044	nicolmf@ornl.gov
Runnerstorm, Eric	MPR Associates	Director of Federal Services	703-519-0200	erunnerstorm@mpr.com
Salizzoni, Rich	Savannah River Remediation	QA Manager	803-208-1827	richard.salizzoni@srs.gov
Selman, Chuck	Savannah River Wackenhut	Manager, Quality Performance Analysis	803-952-7789	c.selman@srs.gov

Shugars, David	Washington River Protection Solutions	QA Manager	509-372-9972	david_l_shugars@rl.gov
Smith, Kevin	Savannah River WSRC	Manager, Quality Services	803-208-3176	kevin.smith@srs.gov
Spencer, Scott	FH	Engineering Resource Manager	509-544-8931	robert_s_scott_spencer@rl.gov
Southhard, Jerry	INL/BEA	Procurement & Supplier Quality Manager		jerry.southard@inl.gov
Sparks, Laurie	CBFO LANL	QA Leader	575-628-3255	sparkie@lanl.gov
Stanberry, Thomas	Paducah Swift & Staley	QA Manager	270-441-5352	tom.stanberry@swiftstaley.com
Stevens, Jeff	Energy Solutions	COO, Federal Services	803-507-2342	jstevens@energysolutions.com
Tisaranni, Jim	URS Corporation	Director Quality Assurance	803 295-3783	jim.tisaranni@wsms.com
Thompson, Robert	CH2M-WG/ICP	Director, Quality Assurance	208-521-0767	robert.thompson@icp.doe.gov
Trone, Janis	CBFO SNL	QA Team Lead	575-234-0051	jrtrone@sandia.gov
Turner, Shelby	CH2M Hill	Senior Technical Advisor for QA	509-376-2144	shelby_j_turner@rl.gov
Tuttel, Dave	Parsons (SRS)	QA Manager	803-952-6272	dave.tuttel@srs.gov
Umek, Tony	SRNS	VP, ESHA QA	803-952-7198	anthony.umek@srs.gov
Verma, Tilak	Portsmouth/ Paducak Uranium Disposition Services	QA Manager		
Warriner, Richard	CHPRC	Quality Systems Manager	509-376-6956	Richard_D_Warriner@RL.gov
Weir, Linda	BNI	Manager, Quality and Performance Assurance	509-371-2263	lmweir@bechtel.com
Weaver, Dennis	BNI			dpweaver@bechtel.com
Webb, William	Longenecker & Associates	Senior Quality Assurance Manager	423-875-6666	ewebb@longenecker-associates.com
Winkler, Jimmy	SRNS	QA Manager	803-952-5882	jimmy.winkler@srs.gov

Other EM Headquarters/DOE/National Laboratory QA Representatives				
Name	**Company/Organization**	**Title**	**Phone Number**	**Email Address**
Adkinson, Larry	DOE-SR	QA	803-952-6012	larry.adkinson@srs.gov
Agarwal, Duli	HS-21/HQ		301-903-3919	duli.agarwal@hq.doe.gov
Armstrong, Ken	EMCBC	QA	513-246-1375	Ken.Armstrong@emcbc.doe.gov
Brown, Mark	NE-Idaho	Assistant Manager, Federal Quality Program	208-526-7065	brownmc@id.doe.gov
Broussard, Colette	HS-23/HQ	Director, QA Policy & Assistance	301-903-5452	colette.broussard@hq.doe.gov
Camaddo, Eric	Oakland Projects Office	ES&H/ QA	510-637-1621	eric.camaddo@emcbc.doe.gov
Davis, Jim	EM-Headquarters (RL)	Construction Management QA	509-376-6600	jim_j_davis@RL.gov
Dihel, Donald	PPPO	Quality Assurance Specialist	270-441-6824	Don.Dihel@lex.doe.gov
Ecclesine, Amy	LANL			aecclesine@lanl.gov
Eckert, Christopher	West Valley		716-942-4783	christopher.j.eckert@wv.doe.gov
Edwards, James	SPRU	CHP CSP, Program Manager, OS&H, HP, QA	518-395-6554	james.edwards@spru.doe.gov
Gambrell, James	EMCBC	QA	513-246-1365	jim.gambrell@emcbc.doe.gov
Greene, Hank	RW/YMP	Principal Quality Specialist	702-821-7359	hank.greene@ymp.gov
Hoskinson, Ron	Brookhaven	QA POC	631-344-3436	hoskinson@bnl.gov
Huxford, Butch	EM-Headquarters	Construction Management QA	803-641-8938	william.huxford@srs.gov
Leivo, Anita	Los Alamos	QA Manager	505-667-1021	aleivo@doeal.gov
Lipsky, Jerry	EM-Headquarters (OR)	Nuclear Engineer	865-231-1667	lipskyjd@oro.doe.gov
Lucas, Paul	Mound	QA POC	937-847-8350	paul.lucas@emcbc.doe.gov
McEvoy, Tim	BNI	Functional Quality Manager	505-660-9385	tjmcevoy@bechtel.com
Murphy, Art	Moab	QA/ Safety Manager	435-719-2845	Art.Murphy@gjemrac.doe.gov
Palay, Christian	EM-Headquarters	Quality Assurance Specialist	202-586-7787	christian.palay@em.doe.gov
Panek, Katrina	Argonne EM Projects	QA POC	630-252-2736	katrina.panek@ch.doe.gov
Perkins, Larry	EM-Headquarters	Nuclear Engineer	202-287-5502	larry.perkins@em.doe.gov
Rankin, Kyle	Hanford/RL	Quality Assurance Specialist	509-373-5749	kyle_m_rankin@rl.gov
Rosano, Debbie	HS-23/HQ	EM Liaison	301-903-8177	debbie.rosano@hq.doe.gov
Ross, Steven	EM-Headquarters	Quality Assurance Specialist	202-586-0973	steven.ross@em.doe.gov
Rowland, Bill	EM-Savannah River	Senior Technical Advisor for QA	803-952-8202	bill.rowland@srs.gov
Sen, Subir	HS-23/HQ	Program Manager	301-903-6571	subir.sen@hq.doe.gov
Sowers, Jim	BNI	Deputy Functional Quality Manager		jwsowers@bechtel.com
Sparkman, Debra	EM-Headquarters	Quality and Safety Management Expert	202-586-3974	debra.sparkman@hq.doe.gov
Stein, Steven	BNL		631-344-5694	stein1@bnl.gov
Stevens, Ron	RW/YMP	Senior QA Manager	702-295-5007	ron_stevens@ymp.gov
Taggert, David	RW/YMP	Senior QA Manager	702-821-8685	david_taggert@ymp.gov

Toro, Bob	EM-Headquarters	Quality Assurance Specialist	202-586-3359	Robert.Toro@em.doe.gov
Ulshafer, Mike	RW-3	Quality Assurance Specialist	702-821-9042	michael.ulshafer@hq.doe.gov
Vega, Sam	Hanford-ORP	Quality Assurance Specialist	509-373-1240	samuel_a_vega@orp.doe.gov

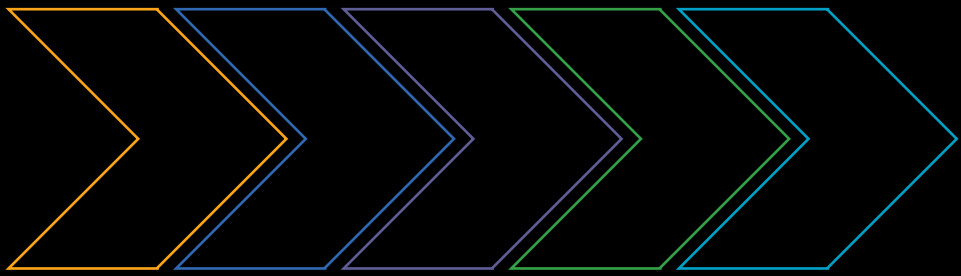
July 2010

Capital and Major Construction Projects Critical Decision Review and Approval

Key Questions for Critical Decision Approval

Standard Review Plan Handbook

Environmental Management
Safety ▪ Performance ▪ Cleanup ▪ Closure



Overview

This Handbook is designed as a practical tool for the Office of Environmental Management (EM) Federal Project Directors (FPDs), Integrated Project Teams (IPTs), Technical Authority Board (TAB), and senior management to ensure that issues and risks that could challenge the success of EM projects are identified early and proactively addressed. The project lessons learned to date, both successes and setbacks, have highlighted the need for a more focused, technically rigorous, and standardized approach to project reviews performed at Critical Decision (CD) points.

The Handbook provides an abbreviated summary of corporate expectations provided in the EM Standard Review Plan (SRP). The SRP is the EM strategic mission-focused framework to formalize EM's institutional processes and requirements associated with the review of capital projects as part of the CD review and approval process.

The SRP is a working document developed in a series of individual Review Modules, which address key functional areas of Project Management, Engineering and Design, Nuclear and Facility Safety, Worker Safety, Environment, Security, and Quality Assurance, grouped per each specific CD point. The technical foundation for the SRP encompasses key milestones established by the DOE O 413.3A, *Program and Project Management for the Acquisition of Capital Assets*, DOE-STD-1189-2008, *Integration of Safety into the Design Process*, and EM's internal business management practices.

The Handbook presents a listing of key issues and questions that need to be considered by the Acquisition Executive, TAB, EM Headquarters Senior Management, and Field Managers, to assure a technically objective and defensible basis for CD approval. The issues and questions are presented for each CD phase. There are also two tables depicting CD prerequisite activities and key documents that provide the basis to address the issues and questions listed.

The SRP complements the TAB framework and assists the FPDs and their IPTs in identifying and evaluating potential significant project management, engineering, technical, and safety issues early in and throughout the project in preparation for CDs. The SRP is developed as a collaborative effort between EM and the Chief of Nuclear Safety, Office of the Under Secretary and can be accessed on the EM webpage at *http://www.em.doe.gov/Pages/Safety.aspx*.

Dr. Inés R. Triay
Assistant Secretary for
Environmental Management

Table 1

Corporate Applications of Standard Review Plans (SRP)

SRP Product	Main Audience	Application	Value Added
Key Questions for CD Approval	**Senior Management**	▪ ESAAB Review for CD Approval ▪ EMAAB Review for CD Approval ▪ EM Project Status Review	▪ Technically objective and defensible basis for Critical Decision approval ▪ Consistent review criteria to ensure DOE and project requirements are met
Review Modules ▪ Project Management ▪ Design and Engineering ▪ Safety, Safety and Health ▪ Security ▪ Quality Assurance	**Project Management**	▪ Construction Project Review ▪ Design, Safety, QA Review ▪ Federal Project Director and Integrated Project Team Daily Project Oversight	▪ Standardized Lines of Inquiry to ensure DOE and project requirements are met ▪ Increased likelihood that unforeseen issues/risks are identified earlier and addressed before posing major challenge to project progress and success
Topical Reports ▪ Seismic Design Expectation ▪ Technology Readiness Assessment	**Contractor**	▪ Day to day project implementation ▪ Contractor self assessment	▪ Added clarity on DOE project expectations

Key Questions for Critical Decision Review and Approval [1]

Performance Status & Verification

CD-0 Appoval on Mission Need	Yes	No
Have **pre-conceptual planning** activities been performed that focus on the program's strategic goals and objectives, safety, environment, security, and design? (all project areas)		
Has a **Mission Need Statement** been prepared that documents mission technical and functional requirements, priority, and constraints? (PM)		
Have all significant project issues been identified, resolved, and documented? (PM)		
Has project reviews been completed, including **Mission Validation Independent Project Review and Construction Project Review**, as directed by EM management? (PM)		
If applicable, have the **Information Technology** elements within the Departmental Enterprise Architecture framework been evaluated? (PM)		
Have the potential hazards and their safety, security, and risk implications been identified and documented in the **Mission Need Statement**? (NFS, E, S)		

[1] *PM = Project Management, ED =Engineering & Design, NFS = Nuclear Facility Safety, WS = Worker Safety, E = Environmental, S = Security, QA = Quality Assurance.*

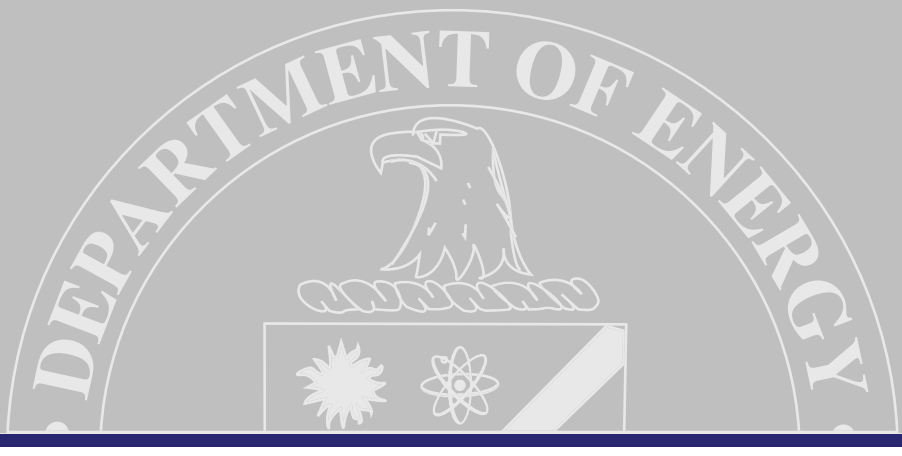
Key Questions for Critical Decision Review and Approval

Performance Status & Verification

CD-1 Approval on Alternative Selection and Cost Range	Yes	No
Has a **Risk Management Plan** been prepared, and are all project risks identified, analyzed, and determined to be either avoidable or manageable? (all project areas)		
Has an **Acquisition Strategy** been completed? (PM)		
Has an **Integrated Project Team (IPT)** been chartered and organized, and is it functioning? (PM)		
Has the **Federal Project Director (FPD)** been appointed and certified at the correct level? (PM)		
Has the preliminary **Project Execution Plan**, including baseline range and documents, been submitted for approval? (PM)		
Have **Long-Lead Procurements** been approved, if necessary? (PM)		
Does the project comply with **One-for-One Replacement** legislation as mandated in House Report 109-86? (PM)		
Is the **Conceptual Design Report** complete after design review by the contractor? (ED)		
Has DOE complete the conceptual design review and prepare a **Conceptual Design Review Report**? If it is a nuclear project, has a **Technical Independent Project Review** been conducted to determine if the safety documentation is adequate? (ED, NFS)		
Has EM management directed project reviews such as **Construction Project Review**, **Technical Authority Review**, or **Technology Readiness Review** to support CD-1 approval? Are the review recommendations being implemented by the project? (all project areas)		
Has the **Project Data Sheet** for design been submitted? (ED and PM)		
Has the project established a **Code of Record** that contains a set of requirements that are used to design, construct, operate, and decommission a nuclear facility over its lifespan? Has DOE reviewed and approved the Code of Record, and has the contractor placed it under change control (all project areas)		
Has a **Safety Design Strategy** been prepared, reviewed and approved by DOE? (NFS)		
Has the contractor developed a **Conceptual Safety Design Report (CSDR)** per DOE-STD-1189? (NFS)		
Has DOE prepared a **Conceptual Safety Design Validation Report (CSDVR)** on the review of the CSDR? (NFS)		

CD-1 Approval on Alternative Selection and Cost Range *(Continued)*

	Yes	No
Has a **Preliminary Hazard Analysis Report** been prepared, if the project is non-nuclear? (FS and WS)		
Has DOE reviewed and approved the **Preliminary Hazard Analysis Report?** (FS and WS)		
Has **Integrated Safety Management** process been initiated and documented for the project? (NFS, WS)		
Have the **High Performance Sustainable Building** considerations been evaluated and documented? (E)		
Have environment documents been prepared, including **National Environmental Policy Act** strategy and analyses, and permit applications? (E)		
Has a **Preliminary Security Vulnerability Assessment Report** been prepared? (S)		
Has an initial **Cyber Security Plan** been prepared? (E)		
Is the site-wide **Quality Assurance Program** acceptable to the project? (QA)		
Has an **External Technical Review (ETR)** of technical alternatives and the conceptual design been conducted? (ED)		
Has a **Technology Readiness Assessment (TRA)** been conducted? (ED)		
Has a **Technology Maturation Plan (TMP)** been developed? (ED)		



Key Questions for Critical Decision Review and Approval

Performance Status & Verification

CD-2 Approval on Performance Baseline	Yes	No
Has the project established a **Performance Baseline**? (PM)		
Has a Performance Baseline **External Independent Review** been conducted by OECM, including an **Independent Cost Estimate**? Are the Corrective Actions been completed? (all project areas)		
Has EM management directed project reviews such as **Construction Project Review**, **Technical Authority Review**, and **Technology Readiness Review** to support CD-2 approval? Are the review recommendations being implemented by the project? (all project areas)		
Has a **Risk Management Plan** been updated to determine if risks have been identified and properly classified? Are appropriate risk mitigation actions incorporated into the baseline? (all project areas)		
Has an **Acquisition Strategy** been updated? Is it consistent with the way the project is being executed? (PM)		
Has an **Integrated Project Team (IPT)** been fully staffed and is it functioning properly? Are there any deficiencies in the IPT that could hinder successful execution of the project? (PM)		
Is the **Federal Project Director's** level of certification still valid? (PM)		
Has the **Project Execution Plan** been updated? (PM)		
Have a detailed **Resource-Loaded Schedule** and **Total Project Cost and Project Schedule** been completed? (PM)		
Does the **Work Breakdown Structure** represent a reasonable breakdown of the project work scope? (PM)		
Has an **Earned Value Management System** been employed and approved? (PM)		
Is the **Preliminary Design Report** completed as part of the contractor's **Design Review**? (ED)		
Are the **Systems, Functions, and Requirements** documents completed and included in the **Code of Record (COR)** and are in the project baseline, including safety, permits, licenses, and regulatory approvals? (ED)		
Has the **Code of Record** been reviewed and approved by DOE? Has the contractor placed the Code of Record under change control? (all project areas)		
Has DOE completed the preliminary design review and prepare a **Preliminary Design Review Report**? (ED)		

CD-2 Approval on Performance Baseline *(Continued)*

	Yes	No
Has the updated **Project Data Sheet** for design been submitted? (PM, ED)		
Has a **Safety Design Strategy** been updated, reviewed and approved by DOE for addressing early integration of safety into design? (NFS)		
Has the contractor developed a **Preliminary Safety Design Report (PSDR)** per DOE-STD-1189? (NFS)		
Has DOE prepared a **Preliminary Safety Validation Report (PSVR)** on the review of the PSDR? (NFS)		
Has a **Hazard Analysis Report** been updated, if the project is non-nuclear? (FS and WS)		
Has the **Integrated Safety Management** process been continuously implemented?		
Has DOE review and approve the **Hazard Analysis Report**? (FS and WS)		
Have the **High Performance Sustainable Building** considerations been documented and incorporated into the project? (E)		
Have a **National Environmental Policy Act** document and **Record of Decision** been prepared? (E)		
Has a **Security Vulnerability Assessment Report** been updated and documented? (S)		
Has a **Cyber Security Plan** been updated? (E)		
Is the **Quality Assurance Program** been updated for the design phase? (QA)		
Has an **External Technical Review (ETR)** of the preliminary design been conducted? (ED)		
Has a **Technology Readiness Assessment (TRA)** been conducted? (ED)		
Has a **Technology Maturation Plan (TMP)** been implemented (ED)		

Key Questions for Critical Decision Review and Approval

Performance Status & Verification

CD-3 Approval on Start of Construction	Yes	No
Has a construction readiness **External Independent Review** been conducted by OECM? Are the Corrective Actions been completed? (all project areas)		
Has EM management directed project reviews such as **Construction Project Review, Technical Authority Review, Technology Readiness Review, Construction Readiness and Worker Safety** reviews to support CD-3 approval? Are the review recommendations being implemented by the project? (all project areas)		
Has the contractor prepared a **Construction Readiness Plan**? Has EM conducted a **Construction Readiness Review** besides the OECM External Independent Review (EIR)? (all project areas)		
Has a **Risk Management Plan** been updated to determine if new risks have been identified in the final design and the risks been properly classified? (all project areas)		
Has an **Acquisition Strategy** been updated? Is it consistent with the way the project is being executed? (PM)		
Is an **Integrated Project Team (IPT)** fully staffed and functioning properly for the construction phase? Are there any deficiencies in the IPT that could hinder successful construction execution? (PM)		
Is the **Federal Project Director's** level of certification still valid? (PM)		
Has the **Project Execution Plan** been updated to reflect final design and does it support the way the project and construction effort is being managed? (PM)		
Have the detailed **Resource-Loaded Schedule and Total Project Cost and Project Schedule** updated? (PM)		
Has an **Earned Value Management System** been continuously employed? (PM)		
Is the **Project Transition to Operation Plan** being initiated? (PM)		
Is a **Final Design Report** complete and have its contents been reviewed and approved by the contractor? ED)		
Has DOE also completed the final design review and prepare a **Final Design Review Report**? (ED)		

CD-3 Approval on Start of Construction *(Continued)*

	Yes	No
Are the **Systems, Functions, and Requirements** documents completed and have they been added to the Performance Baseline and in the **Code of Record**, including safety, permits, licenses, and regulatory approvals? Are changes from the final design review incorporated into the Performance Baseline? (ED)		
Is the **Code of Record** under change control by the contractor? (all project areas)		
Has the contractor completed the **Construction Project Safety and Health Plan** prior to CD-3 approval, as required by 10 CFR Part 851? Has DOE reviewed and approved this plan? (WS)		
Has a **Checkout, Testing and Commissioning Plan** been initiated prior to CD-3 approval? (ED)		
Has the contractor developed a **Preliminary Documented Safety Analysis Report (PDSA)**? (NFS)		
Has DOE prepared a **Safety Evaluation Report (SER)** on the review of the PDSA? (NFS)		
Has a **Hazard Analysis Report** been updated, if the project is non-nuclear? (FS and WS)		
Has DOE reviewed and approved the **Hazard Analysis Report**, if applicable? (FS and WS)		
Has **Integrated Safety Management** process been validated for construction activities? (NFS, WS)		
Have the **High-Performance Sustainable Building** evaluations been completed, integrated to the design, and documented? (E)		
Have **NEPA** documents been completed? (E)		
Has a **Security Vulnerability Assessment Report** been updated and documented? (S)		
Has the **Cyber Security Plan** been updated? (E)		
Is the **Quality Assurance Plan** been modified for construction activities and testing? (QA)		
Has an **External Technical Review (ETR)** of the final design been conducted? (ED)		
Has a **Technology Readiness Assessment (TRA)** been conducted? (ED)		
Has a **Technology Maturation Plan (TMP)** been implemented? (ED)		

Key Questions for Critical Decision Review and Approval

Performance Status & Verification

CD-4 Approval on Start of Operations	Yes	No
Have verifications been performed to determine if **Key Performance Parameters or Project Completion Criteria** have been met and mission requirements achieved? (PM)		
Has a **Checkout, Testing and Commissioning Plan** been completed prior to start of operations? (PM, ED, and NFS)		
Has a **Readiness Assessment** or an **Operational Readiness Review** been completed an all pre-start findings been resolved? (PM, ED, and NFS)		
Has a **Management Self-Assessment** been performed as part of commissioning and readiness review? (PM)		
Has EM management directed additional project reviews such as **Construction Project Review**, **Technical Authority Review**, or **Technology Readiness Review** reviews to support CD-4 approval? Are the review recommendations being implemented by the project? (all project areas)		
Is an **Independent Project Team (IPT)** been fully staff and functioning properly for the testing, commissioning, and project readiness phase? Are there any deficiencies in the IPT that could hinder successfully construction execution? (PM)		
Is the **Federal Project Director's** level of certification still valid? (PM)		
Has the **Construction Project Safety and Health Plan** been updated? (WS)		
Has a **Project Transition to Operation Plan** been developed? (all project areas)		
Has the **Documented Safety Analysis (DSA)** been finalized and have the **Technical Safety Requirements (TSRs)** been established? (NFS)		
Has DOE reviewed and approved the DSA and TSRs and prepared a **Safety Evaluation Report (SER)**? (NFS)		
Has the **Hazard Analysis Report** been finalized and have DOE review and approval been obtained prior to operations? (FS and WS)		
Are the **NEPA** documents and the **High-Performance Sustainable Building** documents finalized and incorporated into the project's **Environmental Management System**? (E)		
Is the **Security Vulnerability Assessment Report** finalized? (S)		
Is the **Cyber Security Plan** finalized? (S)		

CD-4 Approval on Start of Operations *(Continued)*

	Yes	No
Has the **Quality Assurance Plan** been updated? (QA)		
Has the **Code of Record** been updated and kept under change control by the contractor? (all project areas)		

Key Questions for Critical Decision Review and Approval

Performance Status & Verification

Post CD-4 Requirements	Yes	No
Has a **Final Project Closeout Report** been prepared? (PM)		
Has a **Lessons-Learned Report** been prepared and submitted to OECM? (PM)		
Is all of the **Operational Documentation** completed? (PM)		
Has a **Post-Implementation Review** been conducted for **Information Technology** project? (PM)		
Are there project policies or procedures to ensure that the **Code of Record** is being kept under change control for operations and eventual decommissioning? (all project areas)		

Critical Decision Prerequisite Activities
&
Key Documents

Table 2: Critical Decision Approval *Prerequisite Activities*

	CD-0 Approval on Mission Need	CD-1 Approval on Alternative	CD-2 Approval on Performance Baseline	CD-3 Approval on Start of Construction	CD-4 Approval on Start of Operations
Project Management	Perform Pre-conceptual Planning activities Prepare Mission Need Statement Prepare a Tailoring Strategy if required Perform a Mission Validation Independent Project Review Evaluate projects for Information Technology elements within the Departmental Enterprise Architecture framework	Prepare a preliminary Project Execution Plan Prepare an Acquisition Strategy Comply with the One-for-One Replacement legislation Approve appointment of the Federal Project Director Establish and charter an Integrated Project Team Approve Long-Lead Procurements, if necessary	Update the Project Execution Plan Establish Performance Baseline Employ an Earned Value Management System Perform a Performance Baseline Validation External Independent Review (OECM) or a Performance Baseline Validation Independent Project Review Develop an Independent Cost Estimate or perform an Independent Cost Review for Major System Projects	Update all CD-2 project documentation and required approvals to reflect any changes resulting from final Design, including Project Data Sheet, etc Perform an External Independent Review for Construction or Execution Readiness (OECM) Issue a Project Transition to Operations Plan	Verify Key Performance Parameters or Project Completion Criteria have been met and mission requirements achieved Perform final administrative and financial closeout and prepare a Final Project Closeout Report Prepare a Lessons Learned Report Conduct Post Implementation Review Complete project required Operational Documentation
Engineering and Design	Conduct Technical Independent Project Review for Nuclear Projects	Prepare a Project Data Sheet Prepare a Conceptual Design Report Conduct Conceptual Design Review Conduct Technical Independent Review for Nuclear Projects Initiate Code of Record Development	Update the Project Data Sheet, if applicable Prepare a Preliminary Design Report Conduct a Preliminary Design Review Update and Control Change to Code of Record	Initiate a Checkout, Testing, and Commissioning Plan Prepare Final Design Report Conduct Final Design Review Develop Design Code of Record Update and Control Change to Code of Record	Complete a Checkout, Testing, and Commissioning Plan Update and Control Change to Code of Record
Nuclear and Facility Safety	Determine major potential hazards and safety/risk implication	Prepare a Safety Design Strategy for projects subject to DOE STD 1189 Prepare a Conceptual Safety Design Report for Hazard Category 1, 2, and 3 nuclear facilities	Update Safety Design Strategy Prepare a Preliminary Safety Design Report	Update Safety Design Strategy Prepare the Preliminary Documented Safety Analysis	Prepare the Documented Safety Analysis with Technical Safety Requirements

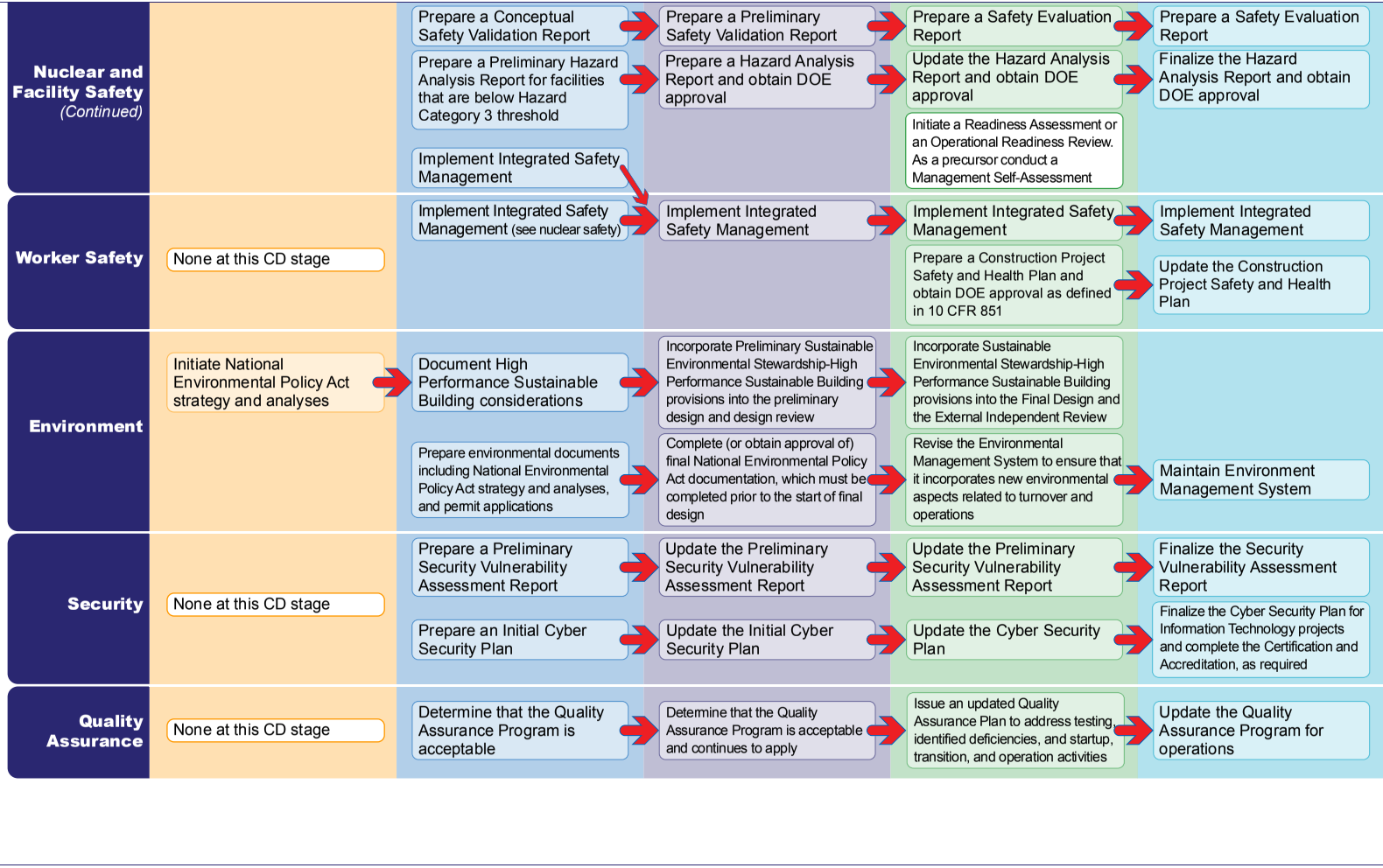
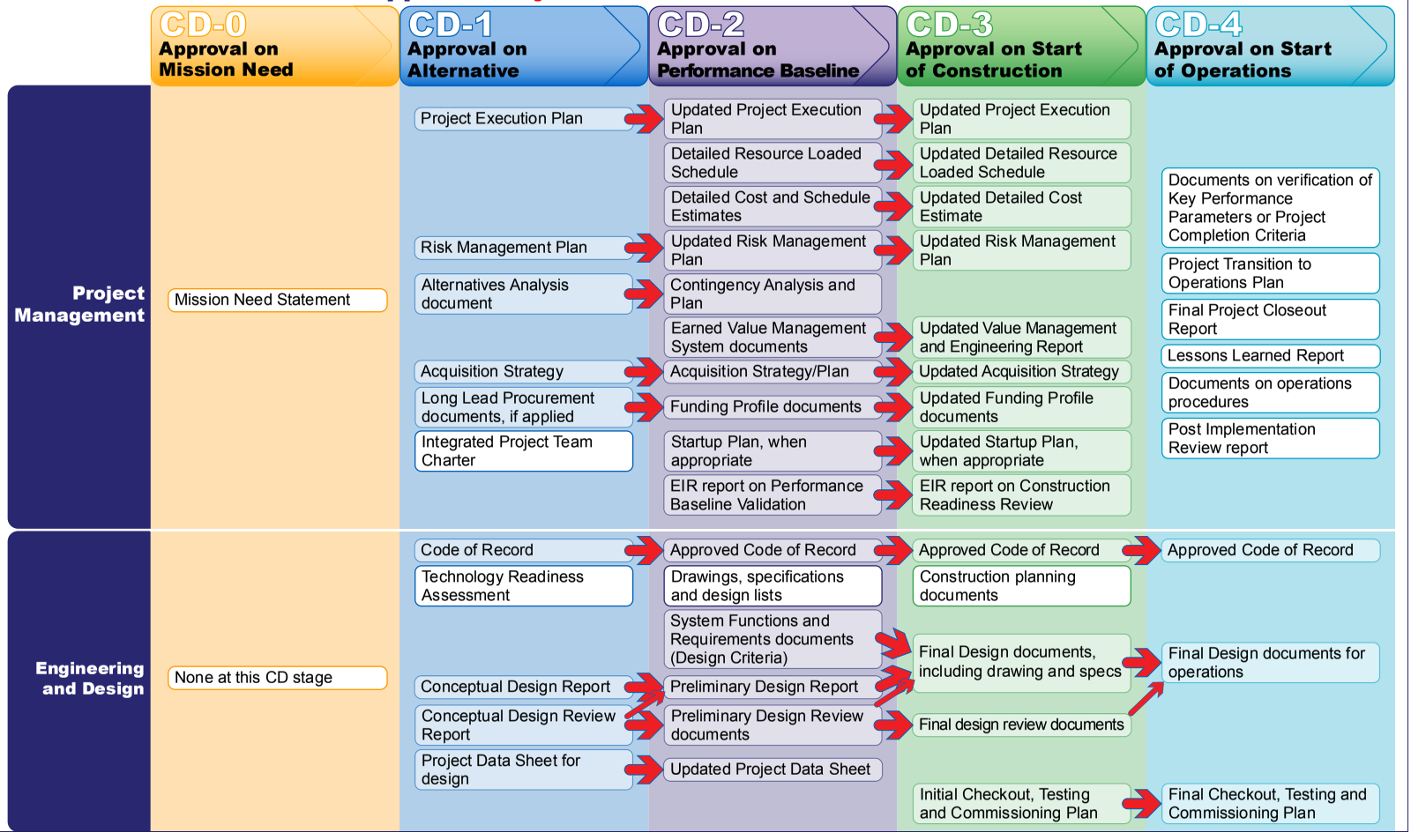
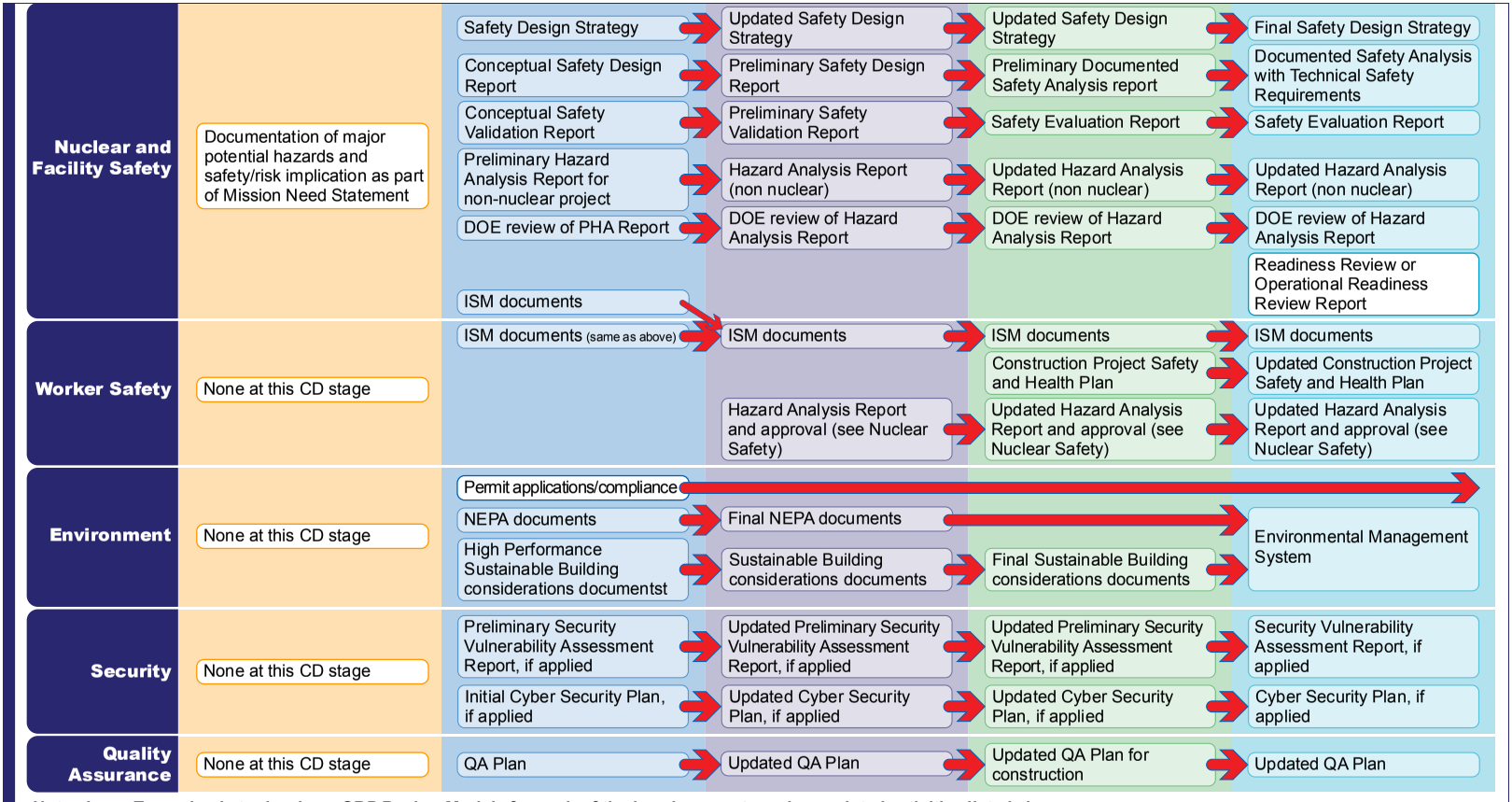

Nuclear and Facility Safety (Continued)
Prepare a Conceptual Safety Validation Report
Prepare a Preliminary Safety Validation Report
Prepare a Safety Evaluation Report
Prepare a Safety Evaluation Report
Prepare a Preliminary Hazard Analysis Report for facilities that are below Hazard Category 3 threshold
Prepare a Hazard Analysis Report and obtain DOE approval
Update the Hazard Analysis Report and obtain DOE approval
Finalize the Hazard Analysis Report and obtain DOE approval
Implement Integrated Safety Management
Initiate a Readiness Assessment or an Operational Readiness Review. As a precursor conduct a Management Self-Assessment
Worker Safety
None at this CD stage
Implement Integrated Safety Management (see nuclear safety)
Implement Integrated Safety Management
Implement Integrated Safety Management
Implement Integrated Safety Management
Prepare a Construction Project Safety and Health Plan and obtain DOE approval as defined in 10 CFR 851
Update the Construction Project Safety and Health Plan
Environment
Initiate National Environmental Policy Act strategy and analyses
Document High Performance Sustainable Building considerations
Incorporate Preliminary Sustainable Environmental Stewardship-High Performance Sustainable Building provisions into the preliminary design and design review
Incorporate Sustainable Environmental Stewardship-High Performance Sustainable Building provisions into the Final Design and the External Independent Review
Prepare environmental documents including National Environmental Policy Act strategy and analyses, and permit applications
Complete (or obtain approval of) final National Environmental Policy Act documentation, which must be completed prior to the start of final design
Revise the Environmental Management System to ensure that it incorporates new environmental aspects related to turnover and operations
Maintain Environment Management System
Security
None at this CD stage
Prepare a Preliminary Security Vulnerability Assessment Report
Update the Preliminary Security Vulnerability Assessment Report
Update the Preliminary Security Vulnerability Assessment Report
Finalize the Security Vulnerability Assessment Report
Prepare an Initial Cyber Security Plan
Update the Initial Cyber Security Plan
Update the Cyber Security Plan
Finalize the Cyber Security Plan for Information Technology projects and complete the Certification and Accreditation, as required
Quality Assurance
None at this CD stage
Determine that the Quality Assurance Program is acceptable
Determine that the Quality Assurance Program is acceptable and continues to apply
Issue an updated Quality Assurance Plan to address testing, identified deficiencies, and startup, transition, and operation activities
Update the Quality Assurance Program for operations

Table 3: Critical Decision Approval *Key Documents*





Note: Long-Term plan is to develop a SRP Review Module for each of the key documents and associated activities listed above.

Points of Contact

For additional information or assistance please contact:

Joseph T. (Tim) Arcano, Jr.
Deputy Chief of Nuclear Safety
Office of the Under Secretary
Phone: (301) 903-0139
joseph.arcano@em.doe.gov

Steven Krahn
Deputy Assistant Secretary
Office of Safety and Security Program
Office of Environmental Management
Phone: (202) 586-2281
steve.krahn@em.doe.gov

Department of Energy
Washington, DC 20585

AUG 2 4 2009

MEMORANDUM FOR DISTRIBUTION

FROM: DR. STEVEN L. KRAHN
ACTING DEPUTY ASSISTANT SECRETARY FOR
SAFETY MANAGEMENT AND OPERATIONS

SUBJECT: Additional Clarification for Issuance and Implementation of the Office of Environmental Management Quality Assurance Program

In her November 5, 2008 memorandum, Dr. Ines Triay, in her position as Principal Deputy Assistant Secretary, approved the issuance and implementation of the Office of Environmental Management (EM) Corporate Quality Assurance Program (QAP). Mr. Dae Chung, in his former position as Deputy Assistant Secretary for Safety Management and Operations, issued additional guidance in December 2008, with respect to EM's corporate expectations regarding effective implementation of the EM Corporate QAP (EM-QA-001, Revision 0, 10/20/2008). All direction to date, with the exception discussed below, should continue to be followed. The following provides clarification and additional information with respect to the use of the American Society of Mechanical Engineers (ASME) Nuclear Quality Assurance-1 (NQA-1), *Quality Assurance Requirements for Nuclear Facility Applications*, during implementation of EM-QA-001.

Briefly, the EM Corporate QAP adopts the ASME NQA-1-2004 (including addenda through 2007) as the national consensus standard to facilitate consistent implementation of quality assurance across all of EM's activities. To ensure cost-effective and efficient application of NQA-1 to the diverse range of activities undertaken by the EM complex, the QAP promotes a graded approach. The graded approach enables EM elements to tailor their QA program to ensure QA requirements and expectations are met as effectively and efficiently as possible.

Several EM sites and projects have inquired about continuing to use different versions of NQA-1 to demonstrate their implementation of the EM Corporate QAP. The inquires have specifically focused on using alternative versions of NQA-1, other than NQA-1-2004, under existing contracts with the understanding that new, revised or re-competed contracts would incorporate and reference the latest version of the EM Corporate QAP requirements and expectations. The Office of Standards and Quality Assurance (EM-64) has evaluated all the inquiries to date. The corporate policy decision regarding this issue is to consider implementation of the EM Corporate QAP through the application of NQA-1-2000, or subsequent editions of NQA-1, as long as a risk-informed evaluation is performed that clearly demonstrates that any identified gaps between the site or project's current QAP and NQA-1-2004 (including NQA-1 addenda through 2007) do not represent any additional risks to quality of EM work, products, and services. The sites

are asked to use the attached standardized EM-HQ Exemption/Exception Variance process to formally submit their requests. Please submit the completed forms to Sandra Waisley, Director, Office of Standards and Quality Assurance (EM-64).

For those sites that are currently implementing or choose to implement NQA-1-2008, a variance or exemption request is not needed to use it as your basis for implementation of the EM Corporate QAP. In addition, for those sites that have contracts that will close within the next 12 months, including any extensions, and the contractors are not performing nuclear activities, also do not need a variance or exemption request. If the contractors are performing nuclear related activities, an exemption or variance would still need to be considered by EM-64.

In closing, our priority is to "do work safely" in concert with "doing work correctly." The Corporate QAP provides a consistent set of requirements and management expectations to achieve quality across the EM complex for all mission-related work. I thank all of you for your continued effort in making the implementation of the EM Corporate QAP our top priority.

Please contact me or Sandra Waisley, EM-64, at (202) 586-5151, if you have any questions concerning this direction.

Attachment

cc:
I. Triay, EM-1
D. Chung, EM-2
C. Anderson, EM-2.1
J. Owendoff, EM-3
B. Smith, EM-3.2
D. Crouther, EM-3.3
J. Fiore, EM-5/6
F. Marcinowski, EM-10
M. Gilbertson, EM-20
M. Sykes, EM-30
D. Cochran, EM-40
J. Surash, EM-50
R. Provencher, ID
T. Konopnicki, NA-50
S. McCracken , OR

DISTRIBUTION

David A. Brockman, Manager, Richland Operations Office (RL)
Shirley Olinger, Manager, Office of River Protection (ORP)
Jeffrey M. Allison, Manager, Savannah River Operations Office (SR)
David C. Moody, Manager, Carlsbad Field Office (CBFO)
William E. Murphie, Manager, Portsmouth/Paducah Project Office (PPPO)
Jack Craig, Director, Consolidated Business Center Ohio (CBC)
Melanie Pearson Hurley, Acting Director, Office of Small Sites Projects
Fred Butterfield, Acting Director, Office of Site Support
Tom Vero, Acting Director, Brookhaven Federal Project Office (BNL)
Richard Schassburger, Director, Oakland Projects Office
John Rampe, Director, Separations Process Research Unit (SPRU)
Bryan Bower, Director, West Valley Demonstration Project Office (WVDP)
Donald Metzler, Director, Moab Federal Project Office (MOAB)
Dennis Miotla, Acting Manager, Idaho Operations Office (ID)
Gerald Boyd, Manager, Oak Ridge Office (OR)

Framework for a Consistent EM-HQ Review of Quality Assurance (QA) Variance and Exemption Requests

Risk-Informed Process for HQ Review of QA Exemption/Variance Requests				
Requesting Organization: DOE Site/Contractor:				
Specifics of Variance/Exemption/Exception Request	EM QAP Requirement	Delta (from Baseline Requirement)	Risk Analysis/Impacts	EM-60 or Designee Recommendation
Document specifically the nature of the variance and/or exemption requested, specific facility or process or operation that will be affected, and the main drivers and justifications for the request	Identify specific section(s) or aspects of QA requirements from which the variance and/or exemption is being requested	Discuss the extent to which request deviates from the objective of the EM QAP and intent of the requirement—discuss issues such as equivalency or non-applicability due to the nature of the situation and circumstances	Provide a qualitative analysis of any potential impacts on project success, if any, including safety and health implications, readiness including Critical Decision (CD) milestones, product quality, cost, schedule, regulatory implications, and any other attributes as applicable *Note: Impacts can be categorized as HIGH, MEDIUM, LOW and must be tied to qualitative analysis*	Provide a risk-informed judgment on EM-HQ acceptability of any anticipated risks as the result of variance and/or exemption request

Risk-Informed Process for HQ Review of QA Exemption/Variance Requests				
Requesting Organization: DOE Site/Contractor:				
Specifics of Variance/Exemption/Exception Request	EM QAP Requirement	Delta (from Baseline Requirement)	Risk Analysis/Impacts	EM-60 or Designee Recommendation
			provided by requestor	

Department of Energy
Washington, DC 20585

OCT 0 8 2010

MEMORANDUM FOR DISTRIBUTION

FROM: DR. STEVEN L. KRAHN
DEPUTY ASSISTANT SECRETARY FOR SAFETY AND SECURITY PROGRAM
ENVIRONMENTAL MANAGEMENT

SUBJECT: Use of NQA-1-2009 Addenda for Issuance and Implementation of the Office of Environmental Management Quality Assurance Program

The Office of Environmental Management (EM) Corporate Quality Assurance (QA) Program (EM-QA-001) was issued in November 2008. The program adopts the American Society of Mechanical Engineers (ASME) NQA-1-2004 (including addenda through 2007) as the national consensus standard to facilitate consistent implementation of QA across all of EM's activities. The Corporate QA Program provides a consistent set of requirements and management expectations to achieve quality across the EM complex for all mission-related work. As always, our priority is to "do work safely" in concert with "doing work correctly". The following provides clarification and additional information with respect to the use of NQA-1 during implementation of EM-QA-001. All direction to date, with the exception discussed below, should continue to be followed.

In August 2009, EM-20 provided a memorandum with additional clarification for issuance and implementation of the EM Corporate QA Program. In that correspondence, EM provided information on the use of other versions of NQA-1 to meet the requirements of the EM Corporate QA Program. Specifically, NQA-1-2000, or subsequent editions of NQA-1, may be used as long as a risk-informed evaluation is performed to clearly demonstrate that any identified gaps between the site or project's QA Program and NQA-1-2004 (including addenda through 2007) do not represent any additional risks to quality of EM work, products, or services. The correspondence also noted that implementation and use of NQA-1-2008 was adequate to meet the associated expectations of the EM Corporate QA Program and does not require a variance or exemption for use. Since the issuance of the 2009 addenda to NQA-1, EM-20 has received requests regarding the implementation of the NQA-1-2009 addenda to meet the EM Corporate QA Program. The Office of Standards and QA (EM-23) have reviewed the 2009 addenda and the enhancements/modifications provided in the updated consensus standard. Based on that review, this memorandum serves to notify those sites that choose to implement the NQA-1 2009 addenda as the basis for implementation of the EM Corporate QA Program that a variance or exemption request is not needed. The review of the 2009 addenda concluded that the enhancements in the standard do not result in any additional risks to the quality of EM work, products or services.

If you have any further questions, please contact me at (202) 586-5151 or Bob Murray, Director, Office of Standards and QA at (202) 586-7267.

cc: I. Triay, EM-1
D. Chung, EM-2
M. Gilbertson, EM-3 (Acting)
C. Anderson, EM-3.1
M. Sykes, EM-4
T. Harms, EM-4.1
C. Wu, EM-10 (Acting)
R. Murray, EM-23
Y. Collazo, EM-30
F. Marcinowski, EM-40
J. Luczak, EM-60
S. Waisley, EM-70
J. Surash, EM-80

Distribution:

Matthew S. McCormick, Manager, Richland Operations Office (RL)
David A. Brockman, Manager, Office of River Protection (ORP)
David C. Moody, Manager, Savannah River Operations Office (SR)
William E. Murphie, Manager, Portsmouth/Paducah Project Office (PPPO)
John Rampe, Manager, Separations Process Research Unit (SPRU)
Edward Ziemianski, Acting Manager, Carlsbad Field Office (CBFO)
John R. Eschenberg, Assistant Manager for Environmental Management, Oak Ridge Office (OR)
James R. Cooper, Acting Deputy Manager for Idaho Cleanup Project (ID)
Steve Feinberg, Director, Brookhaven Federal Project Office (BNL)
Jack R. Craig, Director, Consolidated Business Center Ohio (CBC)
Donald Metzler, Director, Moab Federal Project Office (MOAB)
Bryan Bower, Director, West Valley Demonstration Project Office (WVDP)
Fred Butterfield, Acting Director, Office of Large Site Support
Richard Schassburger, Acting Director, Office of Small Site Completion

Department of Energy
Washington, DC 20585

JAN 11 2011

MEMORANDUM FOR DISTRIBUTION

FROM: KENNETH G. PICHA, JR.
ACTING DEPUTY ASSISTANT SECRETARY FOR
SAFETY AND SECURITY PROGRAM
ENVIRONMENTAL MANAGEMENT

SUBJECT: Prevention, Identification, and Control of Suspect/Counterfeit Electronic Components

The issue of Suspect/Counterfeit Items (S/CI), specifically electronic components and integrated circuits, is an increasing problem throughout the nuclear industry. A report prepared by the U. S. Department of Commerce provides detailed information on the extent and nature of the problem with S/CI electronics in the supply chain. This report is available at the following website: http://www.bis.doc.gov/defenseindustrialbaseprograms/osies/defmarketresearchrpts/final_counterfeit_electronics_report.pdf. It is recommended that Federal staff involved in procurement, engineering, maintenance, and quality assurance (QA) activities review this report. Each of you should also provide this report to your appropriate site contractor(s) for review.

In response to the issue of S/CI electronic components, the Office of Standard and Quality Assurance, EM-23, has been reviewing the practices for control of S/CI across Environmental Management (EM), with particular emphasis on electronic components. As a result of this review, EM-23 has the following initial recommendations for the enhancement of prevention, detection, and control of S/CI counterfeit electronics. These enhancements should be considered for incorporation into the existing S/CI prevention programs that are currently required to be implemented in accordance with Department of Energy Order 414.1C, *Quality Assurance*. These enhancements should be applied using a graded approach with particular emphasis on the procurement of safety class (SC) and safety significant (SS) components. The recommendations related to Prevention, Identification, and Control of S/CI Electronic Components include:

1. Post-receipt inspection and functional testing, by iself, is often ineffective in identifying the presence of S/CI electronic component. An effective means in preventing the introduction of these components into EM facilities is understanding and control of the supply chain. Specifically, EM facilities and projects should:

    a. Strive for the shortest possible supply chains from the sub-component parts manufacturers to the instrumentation fabricators. Every distributor or other intermediary source added to the supply chain increases the chance for introduction of S/CI components;

b. Develop rigorous supply chain assessment processes to be used during audits and commercial grade surveys. Assessment checklists that specifically address S/CI controls should be used, see Recommendation 3 for specific details;

c. Communicate and maintain relationships with original equipment manufacturers (OEMs) to maintain an understanding of the supply chain and any changes that may occur.

2. EM facilities and projects should consider incorporating additional procurement clauses in contracts for acquisition of electronic components. These clauses should include:

   a. A requirement for suppliers to describe their supply chain for electronic sub-components;

   b. A requirement for procurement of sub-components only from OEMs or OEM authorized distributors;

   c. A requirement that suppliers of electronic components procure sub-components from vendors that have a documented successful history with the supplier.

3. EM facilities and projects should enhance assessment checklists used for commercial grade surveys and vendor audits to include:

   a. Verification of vendor sub-component testing protocols;

   b. Review of vendor/distributor S/CI avoidance programs and measures;

   c. Controls associated with customer returns to vendors/distributors to prevent the introduction of S/CI electronic components into vendor/distributor inventory.

4. EM facilities and projects should explore the flexibilities found within "best value" procurement approaches when acquiring electronic components, particularly those performing an SC or SS function. Procuring from suppliers who recognize the significance of S/CI subcomponents in the supply chain and have instituted appropriate controls to their internal supply processes may be the best potential suppliers of equipment whose reliability and dependability meets the system's needs.

5. For the direct procurement of electronic sub-components, EM facilities and projects should consider testing of a sample of these sub-components upon receipt. This approach can be especially useful for simple electronic components (e.g., resistors, capacitors, diodes) that perform an SC or SS function.

It is recommended that each site review the S/CI prevention programs of your site contractor(s) to determine if the programs adequately address the procurement, prevention, and control of S/CI electronic components and address the above recommendations. The issue of S/CI electronic components will be a discussion topic at the next EM QA Corporate Board meeting, which is tentatively scheduled for February 16, 2011, in Oak Ridge, Tennessee.

EM-23 will continue to review the practices used by EM facilities and projects to prevent, identify, and control S/CI electronic components to identify opportunities for improvement and to obtain information to address ongoing inquiries on this topic from the Defense Nuclear Facilities Safety Board. Your cooperation in these reviews may be requested. Also, if you have any lessons-learned regarding S/CI electronic subcomponents encountered at your facilities, please provide those to EM-23 so they may be incorporated into the ongoing efforts in this area.

We look forward to working closely with each site office to address this complex and challenging issue. This partnership between EM Headquarters' and the site offices is a critical part of protecting our facilities and completing our clean up mission.

If you have any further questions, please contact me at (202) 586-5151 or Bob Murray, Director, Office of Standards and Quality Assurance at (202) 582-7267.

cc: I. Triay, EM-1
D. Chung, EM-2
C. Anderson, EM-3
M. Gilbertson, EM-50
J. Surash, EM-80
C. Lagdon, CNS
T. Jackson, CBC
D. Miehls, CBFO
B. Anderson, ID
B. Hawks, OR
R. McCallister, PPPO
A. Hawkins, RL
P. Carier, ORP
C. Harris, SR
G. Boyd, OR
R. Provencher, ID

Distribution:
David C. Moody, Manager, Savannah River Operations Office (SR)
Matthew S. McCormick, Manager, Richland Operations Office (RL)
Jonathan A. Dowell, Acting Manager, Office of River Protection (ORP)
William E. Murphie, Portsmouth/Paducah Project Office (PPPO)
Edward J. Ziemianski, Acting Manager, Carlsbad Field Office (CBFO)
James R. Cooper, Acting Deputy Manager for Environmental Management,
Idaho Operations Office (ID)
John R. Eschenberg, Assistant Manager for Environmental Management,
Oak Ridge Office (OR)
Jack Craig, Director, Consolidated Business Center Ohio (CBC)
John Sattler, Director, Brookhaven Federal Project Office (BNL)
Richard Schassburger, Director, Oakland Projects Office
Steven Feinberg, Manager, Separations Process Research Unit (SPRU)
Bryan Bower, Director, West Valley Demonstration Project Office (WVDP)
Donald Metzler, Director, Moab Federal Project Office (MOAB)

Introduction

On May 5, 2010, the Defense Nuclear Facilities Safety Board (DNFSB) provided a letter (Ref. 1) to the U.S. Department of Energy (DOE) Office of Environmental Management (EM) regarding flow-down of QA requirements, specifically at the Waste Treatment and Immobilization Plant. DOE-EM provided a formal response to the DNFSB in early September 2010 (Ref. 2). The DOE-EM response included regulatory discussions that were deemed necessary to fully answer and address the questions raised in the May 5th letter. In addition to the formal response, EM has prepared this informal document to provide additional discussion of the specific technical issues in the May 5th letter.

Background

Historically, Bechtel National Inc. (BNI) has used NQA-1 Requirements 3 and 11 with Supplemental Requirements 3S-1 and 11S-2 in lieu of Subpart 2.7 to satisfy the minimum requirement basis for suppliers/subcontractors using software to perform safety related design and analysis. These requirements were applied using the graded approach based on the scope of work to be performed. In 2008, the BNI Quality Assurance (QA) program was revised to specifically implement NQA-1-2000 and DOE O 414.1C; however the approach for implementation of the software requirements was not changed. During implementation of the BNI software quality program in 2009, BNI self identified the lack of flow-down of NQA-1 2000 Part II, Subpart 2.7, contrary to the suggested guidance of DOE G 414.1-4. In addition, BNI noted that the existing approach to flow-down did not provide a justified alternative approach or the necessary safety software requirements from DOE O 414.1C when the supplier/subcontractor scope of work included the use of software to perform safety-related design and analysis. This condition is documented in the BNI corrective action program system as Project Issues Evaluation Report (PIER) 24590-WTP-PIER-MGT-09-1413-B, *Flow Down of Software Requirements to vendors performing Design Related Activities* (Ref. 3). As required by the BNI corrective action program, BNI performed an extent of condition review for this issue.

Extent of Condition Review and Actions Taken

The potential extent of condition was identified as:

- all requisitions containing a Q datasheet flowing down NQA-1 2000
- design analysis is included in the scope of work, and
- design analysis activities relied on the use of software.

The extent of condition review identified 3 suppliers and 6 subcontractors that met these conditions. BNI conducted supplier surveillances of the suppliers and subcontractors to evaluate the appropriate implementation of NQA-1 2000 Part I and Part II, Sub Part 2.7 software program requirements. The results of those surveillances are as follows:

- 5 subcontractor and 1 supplier programs were found to be appropriately implementing NQA-1 2000 Part 1 and Part II, Sub Part 2.7 software program quality requirements for acquired software. These subcontractors and supplier only used commercially available software to perform design analyses. BNI placed restrictions on each of these supplier/subcontractors to ensure custom developed software was not used. This action limits the use of software to commercially available software. There is no impact to any deliverables associated with these procurements.
- 2 suppliers programs were found to be non-compliant with respect to the noted software requirements. BNI decided to use an alternative approach to qualifying the vendor's software quality program in these cases. In one case, the requisition was revised to remove design analysis from the scope of work (BNI will perform design work). In the second case, the services will be obtained through commercial grade dedication of the design analysis service. No equipment has yet been delivered from either supplier.
- 1 subcontractor, Dominion Engineering Inc. (DEI), had gaps in their program and restrictions were put in place. The paragraphs below provide details associated with the review of the DEI software quality program, DEI deliverables, and the restrictions applied to DEI.

An impact review of the work products delivered to BNI under the DEI subcontract was performed. BNI has not issued any piping or equipment design based upon the delivered work products from the DEI subcontract. Therefore, there is no impact on any safety related piping/equipment designs or delivered piping/equipment. Subsequent to the DNFSB letter of May 5, 2010, BNI accelerated the onsite review portion of the response and conducted a supplier surveillance (Ref. 4) of DEI on May 21-22, 2010. The surveillance team evaluated the adequacy, implementation, and effectiveness of the DEI QA Program and its subcontractor SwRI® pertaining to software quality. (The BNI assessment activity was observed by EM staff with expertise in Software QA.) This assessment confirmed that the scope of work and work activities performed by SwRI® did not include the use of safety software; therefore, the software requirements are not applicable to the SwRI® scope of work. The assessment determined that the DEI QA Program did not fully implement the NQA-1 2000 Part I; Part II, Subpart 2.7; and DOE O 414.1C software quality requirements. However, based on the results of the assessment, BNI concluded that the gaps in DEI's processes and/or documentation represented minimal risk and do not adversely affect the use of the software or the results. The assessment conclusion was based on the following:

- The assessment team identified that the developed software applications, with the exception of the Quantitative Risk Analysis (QRA) software, are not complex in nature.
- The assessment team performed a code review of one of the DEI software products and found the code to be appropriate.
- The assessment team found that DEI had applied the appropriate software quality assurance processes as a result of implementation of 10CFR50, but was lacking objective evidence supporting that performance.

Therefore, both EM and BNI have concluded that given the level of complexity and the software testing performed by DEI, the deliverables provided to date remain reliable and useful. The gaps in DEI's processes and/or documentation of the software represent an acceptable level of risk for use. The deliverables that were provided by DEI prior to addressing the flow-down issue did not impact structures, systems, or components that are important to safety.

In the case of the QRA software, DEI is in early development of this software, and the software will be in compliance with NQA-1 Part II, Subpart 2.7 and DOE O 414.1C requirements prior to its use in design analysis as required in the updated contract/Q datasheet.

With respect to future deliverables, DEI is currently restricted from issuing any calculations using DEI developed software until the proper requirements are in place per the revised Q datasheet. DEI is also restricted from further software development or revision until BNI verifies the implementation of the NQA-1 Part II, Subpart 2.7, and the applicable DOE O 414.1C software requirements (Ref. 4). These restrictions were put in place to ensure the necessary program improvements are instituted prior to DEI issuing any other deliverables.

Specific Discussion on Adequacy of Flow-Down of Requirements

The scope of work identified in the DEI subcontract is to perform design analysis and research testing. The research testing was subcontracted by DEI to SwRI®.

BNI utilizes QA Requirements Datasheets (Ref. 5) to specify the ASME NQA-1 requirements imposed on a supplier/subcontractor's QA program. The Q Datasheets identify the QA program requirements applicable to 11 different supplier/subcontractor scope types (the applicable supplier/subcontractor scope types for the BNI subcontract with DEI are "Engineering Design and/or Service Supplier" and "Laboratory/Material Analysis Service Supplier" as illustrated in the sample datasheets attached). On May 13, 2010, a revised Q Datasheet was added to the DEI contract to include Part II, Subpart 2.7. The flow down of the applicable DOE O 414.1C Safety Software Requirements is being accomplished using a design analysis specification (24590-WTP-3PS-G00-T0045) which has been included in the BNI subcontract with DEI.

Table 1 is a summary of the requirements flowed from BNI to DEI and the requirements flowed from DEI to SwRI®. A discussion of the basis for the requirements selection and the differences in the flow-down to SwRI® is summarized in the following discussion. As a reminder, DEI is performing safety related analysis and using acquired and developed software to perform that analysis. SwRI® is contracted with performing the research testing.

Table 1. QA Requirements Flow-down from BNI to DEI and from DEI to SwRI®

	From BNI to DEI		From DEI to SwRI®	
Requirement	**Basic**	**Full**	**Basic**	**Full**
1.	**X**		**X**	
2.	**X**		**X**	
3.		**X**		
4.		**X**	**X**	
5. *	**X**		**X**	
6.	**X**		**X**	
7.	**X**		**X**	
8.		**X**		**X**
9.		**X**		**X**
10.		**X**		**X**
11.		**X**		**X**
12.		**X**		**X**
13.	**X**		**X**	
14. *	**X**		**X**	
15.	**X**		**X**	
16. *	**X**		**X**	
17.	**X**		**X**	
18.	**X**		**X**	
Subpart 2.7	X			

*Requirements 5, 14, and 16 contain only a single paragraph (100).

Approach for Flow-down of Requirements by BNI

The work scope in the contract with DEI applies both "Engineering Design and/or Service Supplier" and "Laboratory/Material Analysis Service Supplier" supplier/subcontractor scope types as shown in the attached BNI Q Datasheet. Table 1 demonstrates that the combination of the two supplier/subcontractor scope types results in the Basic requirements being flowed down to DEI for NQA-1 Requirements 1, *Organization*, 2, *Quality Assurance Program*, 6, *Document Control*, 7 *Control of Purchased Items and Services*, 13 *Handling, Storage, and Shipping*, 15, *Control of Nonconforming Items*, 17, *Quality Assurance Records*, and 18, *Audits*. (Note Requirements 5, 14, and 16 contain only a single paragraph.) BNI has applied a graded approach, augmented by project experience, in the development of the quality requirements datasheets. The application of the graded approach for NQA-1 Requirements 1 and 7 are discussed as examples.

NQA-1 Requirement 1, *Organization*:
The BNI Q Datasheet identifies NQA-1 Requirement 1 as Basic for all 11 supplier/subcontractor scope types. In a graded approach, Basic is applied as BNI procurement documents provide controls for organizational interfaces for activities associated with the work scope. Procurement documents also delineate responsibilities for the work activities associated with the work scope. The Basic requirements identified in Requirement 1 as supplemented by BNI procurement documents provide the necessary requirements/controls for any supplier/subcontractor scope type. Further, through a detailed review of supplier submittals, BNI is able to judge the adequacy of work products. This reduces reliance on the supplier's organizational structure to ensure quality.

NQA-1 Requirement 7, *Control of Purchased Items and Services*:
The BNI Q Datasheet identifies NQA-1 Requirement 7 as Full for 6 supplier/subcontractor scope types, Basic for 4 supplier/subcontractor scope types, and not applicable to 1 supplier/subcontractor scope type. Requirement 7 is written for both items and services. The Full set of requirements in Requirement 7 are applied to supplier/subcontractor scope types where items (materials, equipment, and/or components) are within the work scope of the procurement (e.g.; Design/Build; Build to Print; Material Supplier, etc.). The Basic requirements are applied to supplier/subcontractor scope types where typically services or non permanent plant items are provided within the work scope of the procurement (e.g.; Design Analysis;

Equipment Testing Services; Calibration, M&TE, and Instrumentation Services; and Laboratory Analysis). Section 100, Basic provides for source evaluation and selection, evaluation of objective evidence of quality furnished by a prospective supplier, source inspection, audit, and examination of items/services upon delivery/completion. The text of Requirement 7 sections 502, 503, 504, 505, 506, 600, and 700 are not typically applicable when only services are procured. The BNI supplier qualification process is responsible for verifying measures are established and implemented to address the Basic requirements consistent with the complexity and importance of the item. Therefore, the Basic requirements, along with the BNI Supplier Qualification audit of the supplier/subcontractor, provide the necessary requirements/controls for service only providers.

Differences in Flow-down Between DEI and SwRI®

Differences in flowdown to DEI versus SwRI® show up in NQA-1 Requirements 3, *Design Control* (full requirement passed from BNI to DEI but neither basic nor full requirement passed from DEI to SwRI®), 4, *Procurement Document Control* (full requirement passed from BNI to DEI but only the basic requirement passed from DEI to SwRI®) and Subpart 2.7, *Quality Assurance Requirements for Computer Software for Nuclear Facility Applications* (recently flowed from BNI to DEI but not flowed to SwRI®). These differences are shaded in Table 1. The rationale for each of these differences is documented in the following discussion.

NQA-1 Requirement 3 identifies the quality requirements for a design control program. BNI flowed-down the full Requirement 3 to DEI as design control and design analysis is a fundamental activity in the DEI work scope. This requirement was not flowed to SwRI® in either Basic or Full as safety related design analysis activities were not within the scope of work of the DEI subcontract with SwRI®.

NQA-1 Requirement 4 identifies the quality requirements for a procurement document control program. BNI flowed-down the full Requirement 4 to DEI because of the ability of the supplier/subcontractor to procure items such as software and to subcontract portions of their scope of work and the significance of this activity on the quality of the product. The flow-down of the Basic requirement to SwRI® is based on a graded approach as procurement activities for this type of work activity have minimal impact on the quality of the product, in this case research testing results generated directly by SwRI®.

NQA-1 Part II, Subpart 2.7 identifies the quality requirements for a software quality program. Once corrected from the original contract, BNI flowed-down the full Requirement to DEI as DEI is using acquired and developed software in design analysis and is developing the QRA software. This requirement was not flowed to SwRI® in either Basic or Full because the SwRI® scope of work does not include safety related design analysis and software.

Summary

In conclusion, DOE-EM agrees that the original flow-down of Software quality requirements from BNI to DEI was inadequate as identified by BNI in September 2009 and the DNFSB in May 2010. Based on the extent of condition that was conducted, EM has concluded that there is no adverse impact on the project from the deliverables received prior to the identification. In addition, the specific issue associated with DEI has been corrected via contract modification. The requirements that are currently flowed-down to DEI and SwRI® are considered adequate for the scope of work performed by these companies. EM acknowledges the timeliness of the correction could have been expedited prior to the DNFSB letter, but is comfortable that the existing processes identified the issue and appropriate corrective actions have been taken to prevent recurrence.

References

1. Defense Nuclear Facilities Safety Board's letter regarding the review of the Quality Assurance (QA) aspects of the hydrogen in pipes and ancillary vessels experimental test program for the Waste Treatment and Immobilization Plant, May 5, 2010.
2. U.S. Department of Energy, Office of Environmental Management Response to the Defense Nuclear Facilities Safety Board's letter regarding the review of the Quality Assurance (QA) aspects of the hydrogen in pipes and ancillary vessels experimental test program for the Waste Treatment and Immobilization Plant, September 2, 2010.

3. Project Issues Evaluation Report (PIER) 24590-WTP-PIER-MGT-09-1413, Flow Down of Software Requirements to Vendors Performing Design Related Activities; 16 September 2009.
4. 24590-WTP-SUV-QA-10-032. Supplier Surveillance Report: Evaluate the adequacy, Effectiveness, and implementation of Dominion Engineering, Inc.'s Quality Assurance Program as it pertains to software quality, May 22, 2010.
5. 24590-WTP-3DP-G06B-00010, Specifying Supplier Quality Assurance Program Requirements.

MR/SR No.: Rev. Attachment: Job No: 24590

Q Datasheet of ANSI/ASME NQA-1 (2000) Quality Assurance Program Requirements

This Q Datasheet establishes ASME/ANSI NQA-1 (2000) Quality Assurance (QA) program requirements applicable to this purchase order. Each supplier in the supply chain is required to document and implement a QA program that complies with, as a minimum, the requirements defined herein based upon the type or scope of work to be performed. Example: If the supplier is performing in a manufacturing (design/build) capacity, the applicable requirements of the Q Datasheet are those identified under "Manufacturing (Design/Build)."

Suppliers are required to flow-down applicable QA Program Requirements to each of their sub-tier suppliers. Suppliers should consider the "Supplier Service/Activity" and related requirements identified in the table below as a guide in determining the applicable NQA-1 (2000) criteria to flow-down to sub-tier suppliers.

Supplier-Provided Service and/or Activity	NQA-1 (2000) Criteria[a,c]																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Engineering Design and/or Analysis Service Supplier[b]	B	B	F	F	B	B	B				F					B	B	B
Equipment Testing Service Supplier	B	F			B	B		F		B	F	F	B		B	B	B	B
Calibration, Measuring and Test Equipment and Instrumentation Service	B	B		B	B	B	B	B				F	B	B	B	B	B	B
Nondestructive Examination (NDE) and Inspection Service Supplier	B	F		B	B	B	B	B	F	B		F	B	B	B	B	B	B
Manufacturing (Design/Build), including Manufacture or Design by Sub-tier Suppliers[b]	B	F	F	F	B	B	F	F	F	F	F	F	F	B	F	B	B	F
Manufacture/Supplier (Catalog Items)[d]	B	F	B	F	B	B	F	F	F	F	F	F	B	B	F	B	B	B
Fabricator (Build to Print) and/or Site Installer Supplier/Subcontractor	B	F		F	B	B	F	F	F	F	F	F	F	B	F	B	B	F
Distributor/Warehouse	B	B		F	B	B	F	F		B		B	F	B	B	B		B
Dedicator of Commercial Grade Equipment (3rd party dedicator)	B	F	B	F	B	B	F	F	F	F	F	F	B	B	F	B	B	B
Laboratory/Material Analysis Service Supplier (including laboratories used for CGD)	B	B		B	B	B	B	F	F	F	F	F	B	B	B	B	B	B
Material Manufacturer/Material Supplier[e]	B	F		F	B	B	F	F	F	F	F	F	B	B	F	B	B	B

Q Datasheet of ANSI/ASME NQA-1 (2000) Quality Assurance Program Requirements

KEY: B Applicable NQA-1 (2000) Basic Requirement
F Applicable NQA-1 (2000) Full Requirement

NOTES:

a It may be determined during facility audit that individual criteria identified are not applicable.

b When developed and/or procured software is used in the performance of design analysis or nuclear safety related analysis, NQA-1 Part II Subpart 2.7 requirements apply to this scope of work.

c When a software system is included in the work scope, NQA-1 Part II Subpart 2.7 requirements for software will be described in a specification.

d Standard catalog item sold without modification to BNI. No customization or application-specific design for the WTP. Category of supply would include valves, instrumentation/controls, power and control cable, etc.

e Commodity materials to include structural steel, pipe and fittings, grout, gasketing materials, i.e., products/materials that are not subject to design beyond that described in an industry standard.

The following applies whether requirement 7 is partially or fully invoked:

A. Supplier Qualification

Suppliers of "Q" (NQA-1) items, materials, or services are preferably qualified by audit. Alternatively, qualification may be based on the following:

1. Material suppliers and manufacturers may be qualified based on verification that they possess a Quality System Certificate (NCA-3800) or N / NPT Certificate of Authorization per (NCA-4000) ASME Code Section III, provided that:
   a) The supplier's QA Program permits and describes the requirements for qualifying suppliers to furnish material under NCA 3800/4000 certification;
   b) Purchase orders state that items or materials ordered must be in compliance with the QSC, N, or NPT Certificate of Authorization requirements and will remain in compliance with the QSC, N, or NPT Certificate of Authorization requirements until the order is delivered to the purchaser;
   c) Purchased items or materials must be within the scope of supply allowed by the ASME Section III certification;
   d) Traceability of the Material Test Report (MTR) to the material and QSC, N, or NPT Certificate of Authorization is verified at receipt; and
   e) A procedure is developed to address periodic testing of MTR stated physical and chemical properties for received material.

2. Laboratory service providers, such as suppliers of calibration services or material testing/analysis services, may be qualified without audit if they are certified/accredited by the American Association for Laboratory Accreditation (A2LA), National Voluntary Laboratory Accreditation Program (NVLAP), or certification to ISO 17025 for calibration service providers when the company is the original equipment manufacturer (OEM), provided that:
   a) The supplier's QA Program permits this method of qualification;
   b) The procured service is included in the scope of the certification/accreditation;
   c) The certificate/accreditation must be current at the time the service is provided;
   d) The supplier must have and retain a copy of the certificate/accreditation in effect at the time of the provided service; and
   e) The supplier must evaluate the validity of the certificate/accreditation. This evaluation must be documented and retained for review by purchase.

3. Domestic steel mills may be qualified by onsite audit of the mill's laboratory, which provides the MTR. Alternatively, method A.2., above, may be used to qualify the mill's laboratory or 3rd party providing material certification services. In all cases, the source material must be traceable to the MTR.

B. Commercial Grade Dedication (CGD)

If Q items, materials or services cannot be procured from suppliers qualified in accordance with the requirements of NQA-1 (2000), then CGD may be used, provided that:

1. The supplier's QA Manual adequately describes the requirements for CGD; and
2. The supplier's CGD procedure and CGD plan (if applicable) are submitted to BNI for review prior to implementation.
3. The supplier shall meet required notifications and submittals as specified in the Purchase Order and referenced procurement documents.

The Secretary of Energy
Washington, DC 20585

January 14, 2011

MEMORANDUM FOR HEADS OF DEPARTMENTAL ELEMENTS

FROM: STEVEN CHU

SUBJECT: Improving Mission Execution

In order to transform the way Americans generate and use energy, we must transform the Department itself. Together, we have started to do that, changing the way the Department works by breaking down bureaucratic silos to better integrate our energy and science efforts, including sharing expertise to develop funding opportunity announcements, getting loan guarantees out the door for the first time, recruiting talented hires, and improving management and operations. But both the Deputy Secretary and I recognize there is more to do.

The underlying premise for all these efforts is the same: our mission is urgent; our organization and processes must match this urgency. This memorandum serves to introduce a path forward on putting into place the best practices learned through the Recovery implementation and distilled in subsequent conversations.

Specifically, I have recruited Mike Weis to join us as the Senior Advisor for Operations. Mike, who is currently the Fermi Site Office Manager will remain in that position, but has generously agreed to take on this critical duty. In this capacity, Mike's sole purpose is to work with all of you to strengthen decision making and streamline processes for enduring, sustainable change. Similar to my relationship with Matt Rogers, I will be meeting with Mike at least once a week to track the progress.

Let me be clear on my expectations regarding roles and responsibilities: the Under Secretaries and Assistant Secretaries, as the primary line managers in the Department, continue to be responsible, have the authority, and be accountable for mission execution, while the functional organizations in the Department are here to enable and support those missions. Mike will work with you to support changes that are at odds with this understanding of roles and responsibilities, and that will make the Department more effective in delivering our mission, eliminating roadblocks, barriers, and do-loops that prevent us from achieving success. Mike's role is to be your representative in my office. I expect that all of you will work with Mike to:

- Expedite and improve the decision-making process by optimizing the number of people involved, streamlining the number of steps, reducing appeals, and communicating final decisions within the organization;

- Assure that decisions are made at the right level within the line management organization – aligning authority and accountability at those levels;

- We will work towards risk-informed decision-making rather than time-consuming, enervating consensus-building;

- Engage the career federal employees to institutionalize these changes for the long-term;

- Identify and eliminate non-value added activities performed in the name of oversight and/or compliance; and

- Review ongoing "reform efforts" to assess progress and determine if additional activity is needed.

I ask that each of you resist the urge to accept the status quo as the best that we can do and to use this opportunity to improve mission execution and our operations in a sustainable and enduring way.

Department of Energy
Washington, DC 20585

January 24, 2011

MEMORANDUM FOR DISTRIBUTION

FROM: DAE Y. CHUNG
PRINCIPAL DEPUTY ASSISTANT SECRETARY
FOR ENVIRONMENTAL MANAGEMENT

SUBJECT: Environmental Management Interim Policy for Maintaining the Integrity of Quality Assurance Program Commitments for Used Nuclear Fuel/High Level Waste

A critical aspect of the Office of Environmental Management (EM) mission is the responsibility for the management of DOE high-level radioactive waste and DOE Used Nuclear Fuel. DOE Order 435.1-1 and DOE Manual 435.1-1 provide the general requirements for these management activities; 10 CFR Part 830 provides the Quality Assurance (QA) requirements including the requirement for a Quality Assurance Program (QAP). EM, in part, has satisfied its responsibility for developing and implementing a QAP by adopting and adhering to the Quality Assurance Requirements and Description document (QARD) which was developed and maintained by the Office of Civilian Radioactive Waste Management (OCRWM). Although the OCRWM has ceased operating, EM will continue to follow the QARD.

Except for those Field Offices that have been authorized to work to different revisions of the QARD, EM will continue to implement Revision 20 of the QARD. EM will neither make changes nor manage the QARD. Field Offices are not authorized to modify the QARD revision to which they are currently authorized to work. In addition, each Field Office is expected to continue implementing the EM QAP (EM-QA-001) as described in their organization-specific Quality Assurance Implementation Plans, also known as "QIPs".

The Office of Standards and Quality Assurance, EM-23, will serve as the focal point of contact within EM to support the Waste Custodians with issues related to applicable QA regulatory interpretation and clarification, assessments, or technical assistance needs.

For any questions or assistance, please contact Mr. Kenneth G. Picha, Jr., Acting Deputy Assistant Secretary for Safety and Security Program at (202) 586-5151.

Distribution
Jonathan Dowell, Acting Manager, Office of River Protection (ORP)
David Moody, Manager, Savannah River Operations Office (SR)
Matthew McCormick, Manager, Richland Operations (RL)
James Cooper, Acting Deputy Manager for Idaho Clean-up Project (ID)
Bryan Bower, Director, West Valley Demonstration Project Office (WVDP)

cc: C. Anderson, EM-3
R. Murray, EM-23
Y. Collazo, EM-30
F. Marcinowski, EM-40
M. Gilbertson, EM-50
R. Provencher, ID
N. Dinunzio, GC-52
J. Malmo, NE-ID
B. Beller, NE-ID
S. Charboneau, ORP

Department of Energy
Washington, DC 20585

FEB 04 2011

MEMORANDUM FOR DISTRIBUTION

FROM: KENNETH G. PICHA, JR.
ACTING DEPUTY ASSISTANT SECRETARY FOR
SAFETY AND SECURITY PROGRAM
ENVIRONMENTAL MANAGEMENT

SUBJECT: Support to the Field Sites Regarding the Environmental Management Interim Policy for Maintaining the Integrity of Quality Assurance Program Commitments for Used Nuclear Fuel/High Level Waste

On January 24, 2011, the Principal Deputy Assistant Secretary of Environmental Management issued the Interim Policy for Maintaining the Integrity of Quality Assurance Program Commitments for Used Nuclear Fuel /High Level Waste. This interim policy directed the EM custodians of Used Nuclear Fuel /High Level Waste to continue to implement the requirements specified in the Quality Assurance Requirements Description (QARD) document.

In order to support the interim policy and the EM custodians, the Office of Standards and Quality Assurance (EM-23) will conduct independent audits of the EM Waste Custodians. EM-23 and the Office of Civilian Radioactive Waste Management (OCRWM) had previously conducted these audits jointly per the QARD before OCRWM ceased operating.

If you have any further questions, please contact me at (202) 586-5151 or Robert D. Murray, Director, Office of Standards and Quality Assurance at (202) 582-7267.

cc: D. Chung, EM-2
C. Anderson, EM-3
R. Murray, EM-23
Y. Collazo, EM-30
F. Marcinowski, EM-40
M. Gilbertson, EM-50
R. Provencher, ID
B. Beller, NE-ID
S. Charboneau, ORP
T.J. Jackson, EMCBC

Distribution

Jonathan A. Dowell, Acting Manager, Office of River Protection (ORP)
David C. Moody, Manager, Savannah River Operations Office (SR)
Matthew S. McCormick, Manager, Richland Operations (RL)
James R. Cooper, Acting Deputy Manager for Idaho Clean-up Project (ID)
Bryan Bower, Director, West Valley Demonstration Project Office (WVDP)

Department of Energy
Washington, DC 20585

FEB 17 2010

MEMORANDUM FOR DISTRIBUTION

FROM: DR. STEVEN L. KRAHN
DEPUTY ASSISTANT SECRETARY FOR
SAFETY AND SECURITY PROGRAM
ENVIRONMENTAL MANAGEMENT

SUBJECT: Protocol for EM-HQ Review/Field Self-Assessment of Site Specific Quality Assurance Plans Quality Assurance Implementation Plans dated February 2010

The Office of Environmental Management (EM) issued its Corporate Quality Assurance Program (QAP), EM-QA-001, in November 2008. The EM Corporate QAP serves as the Quality Assurance (QA) roadmap to ensure that the EM mission is accomplished safely, correctly, and efficiently. Using a graded approach, Headquarters (HQ) and each Field organization is required to prepare a Quality Assurance Implementation Plan (QIP) identifying procedures and documents that directly implement the applicable requirements of the QAP.

This memorandum serves to transmit the Protocol for EM Review/Field Self-Assessment of Site-Specific QAP/QIP. The subject document is developed as part of continued efforts to ensure technical consistency, transparency, and clarity of QA requirements and expectations. The purpose of the document is to present the review protocol and lines of inquiry that were developed for use by EM-HQ to perform the technical review and approval of site-specific QAP/QIP. The review protocol and lines of inquiry are also designed to be used by EM Field Offices, sites, and projects to conduct internal self-assessment of effectiveness of their QAP/QIP development and implementation.

Each field office with a HQ Phase I approval or conditional approval of their QAP/QIP should now be engaged in the process of implementing the document. Once implementation is complete (including any corrections from the Phase I review), each field office should initiate Phase II of the approval process. Phase II requires the validation and verification of implementation via self assessments and HQ review. In order to facilitate this validation effort, an Office of Standards and Quality Assurance (EM-23) representative will participate in each field office self assessment. Please have your staff coordinate with Bob Toro, EM-23, to ensure a HQ representative participates in each of your implementation validation self assessments. Mr. Toro can be reached at 202-586-3359. Each site is also required to provide EM-23 a monthly update on the status of the implementation beginning in March 2010. These updates may be informal (e.g., phone, email) and should be provided to Kriss Grisham (EM-23) at (310)-903-8478 or at kriss.grisham@hq.doe.gov.

The Field led self-assessments coupled with QA assist visits by the EM-23, represent a critical element of the overall Fiscal Year 2010 corporate strategy to ensure QA is integrated in every aspect of the EM mission, including projects funded by the American Recovery and Reinvestment Act.

If you have any questions, please contact me at (202) 586-5151.

Attachment

cc: Dae Y. Chung, EM-2
F. Marcinowski, EM-3
R. Murray, EM-23
R. Toro, EM-23
K. Grisham, EM-23
M. Gilbertson, EM-50

DISTRIBUTION:

David A. Brockman, Manager, Richland Operations Office (RL)
Shirley Olinger, Manager, Office of River Protection (ORP)
Jeffrey M. Allison, Manager, Savannah River Operations Office (SR)
David C. Moody, Manager, Carlsbad Field Office (CBFO)
William E. Murphie, Manager, Portsmouth/Paducah Project Office (PPPO)
John Rampe, Manager, Separations Process Research Unit (SPRU)
Dennis Miotla, Acting Manager, Idaho Operations Office (ID)
Gerald Boyd, Manager, Oak Ridge Office (OR)
Richard B. Provencher, Deputy Manager, Idaho Operations Office (ID)
Thomas Vero, Acting Director, Brookhaven Federal Project Office (BNL)
Richard Schassburger, Director, Oakland Projects Office
Bryan Bower, Director, West Valley Demonstration Project Office (WVDP)
Donald Metzler, Director, Moab Federal Project Office (MOAB)
Jack Craig, Director, Consolidated Business Center Ohio (CBC)
John Moon, Acting Director, Office of Small Site Completion
Joanne Lorence, Acting Director, Office of Large Site Support

The referenced attachment can be found at on the Environmental Management website via the Standard Review Plan (Quality Assurance Section) at the following link:

http://www.em.doe.gov/Pages/StandardReviewPlanModules.aspx

Department of Energy

Washington, DC 20585

August 17, 2010

MEMORANDUM FOR DISTRIBUTION

FROM: INÈS R. TRIAY
ASSISTANT SECRETARY FOR
ENVIRONMENTAL MANAGEMENT

SUBJECT: Office of Environmental Management Headquarters Implementation of the Corporate Quality Assurance Program, EM-QA-001

The Office of Environmental Management (EM) is responsible for a wide range of critical activities including managing the design, construction, operation, and eventual disposition of mission-critical projects/facilities. Coupled with this ongoing mission is the added responsibility for EM to diligently leverage and apply American Recovery and Reinvestment Act funds to accelerate the completion of its mission and create thousands of new jobs to revitalize the economy.

A key corporate function that all EM-Headquarters (HQ) organizations have in common is our collective responsibility to ensure that the necessary quality requirements, expectations, and standards are properly identified and adequately implemented in all HQ activities. The premise for our business model is based on the recognition that the EM mission is performed in the Field and the HQ staff serves as a specialized service provider to the Field organizations.

In November 2008 EM issued our Corporate Quality Assurance Program (QAP), EM-QA-001. The Corporate QAP provides a consistent set of Quality Assurance (QA) requirements and expectations for the entire EM organization, including HQ, Field Offices, and Contractors. The QA requirements addressed in EM-QA-001 include DOE Order 414.1C, *Quality Assurance*; 10 CFR 830, Subpart A; *Quality Assurance Requirements*; American Society of Mechanical Engineers Nuclear Quality Assurance (NQA)-1-2004 with addenda through 2007, *Quality Assurance Requirements for Nuclear Facility Applications (QA)*; and EM Management Expectations. The EM QAP is a key strategy under Goal number 5 of the Journey to Excellence to improve safety and quality performance within EM.

Using a graded approach, HQ and each Field organization is required to prepare a Quality Assurance Implementation Plan (QIP) identifying procedures and documents that directly implement the applicable requirements of the QAP. The graded approach provides EM organizations with the operational flexibility to develop and cost-effectively implement a program/project-specific QA program that best meets the needs, complexities, and anticipated risks associated with planned activities.

EM-HQ has adopted the Corporate QAP in its entirety, which supersedes the QAP Plan dated May 2008. We have developed our HQ QIP (EM-HQ-QIP-001) based on the

existing set of EM-HQ Standing Operating Policies and Procedures (SOPP) and other office specific business practices (e.g., memorandum, codes of record).

The QAP/QIP are intended to enhance the transparency and clarity of our quality standards and expectations, ensure technically sound and rigorous business processes; and, most importantly, promote consistency and stability in the delivery of HQ services.

The EM-HQ QIP (April 2010) has been conditionally approved for Phase II implementation. We believe that the implementing documents referenced in the QIP (i.e., the same documents previously used to implement the May 2008 Quality Assurance Program Plan) remain compliant with the requirements of EM-QA-001. The Office of Standards and Quality Assurance, EM-23, will work closely with each EM-HQ organization and will provide, as needed, QA technical expertise and resources to conduct an implementation review. Each EM-HQ office is to complete the following:

- Designate a single point of contact that will be responsible for examining the documentation of their office to verify that the requirements and expectations of EM-QA-001 are met as shown in EM-HQ-QIP-001.
- Ensure the designated point of contact for each office coordinates with the EM-23 office to complete the implementation review (Robert Murray is the EM-23 point of contact).
- Ensure the implementation review is completed by December 2010.

Our efforts in this area will serve to ensure our EM activities are completed safely and correctly, while demonstrating our cooperation and commitment to a robust quality program across the complex.

If you have any questions or need assistance, please contact Robert Murray, at (202) 586-7267 or robert.murray@em.doe.gov.

Attachments

cc: D. Chung, EM-2
S. Olinger, EM-2.1
M. Gilbertson, EM-3 (Acting)
M. Sykes, EM-4

Distribution:

C. Anderson, EM-3.1
T. Harms, EM-4.1
G. Riner, EM-10 (Acting)
L. Ely, EM-11
G. Girard, EM-12 (Acting)
S. Krahn, EM-20
C. Wu, EM-21
R. Goldsmith, EM-22
R. Murray, EM-23 (Acting)
K. Goodwin, EM-24
Y. Collazo, EM-30
S. Schneider, EM-31 (Acting)
K. Gerdes, EM-32 (Acting)
G. Deleon, EM-33
F. Marcinowski, EM-40
W. Levitan, EM-41
M. Nielson, EM-42
C. Gelles, EM-43
A. Szilagyi, EM-44
S. O'Connor, EM-45
M. Gilbertson, EM-50
F. Butterfield, EM-51 (Acting)
R. Schassburger, EM-52 (Acting)
J. Luczak, EM-60
C. Flohr, EM-61
J. Rhoderick, EM-62
S. Waisley, EM-70
D. Crouther, EM-71
J. Beard, EM-72
M. Holt, EM-73
J. Surash, EM-80
M. Howard, EM-81
R. James, EM-82 (Acting)

EM Environmental Management
safety ❖ performance ❖ cleanup ❖ closure

www.em.doe.gov

EFCOG Energy Facility Contractors Group

Department of Energy
Office of Environmental Management and
Energy Facility Contractors Group

2010 Quality Assurance
Improvement Project Plan

Approved by:

Steve Krahn, DOE/EM
Deputy Assistant Secretary
Safety and Security Program, EM-20

Joe Yanek, Fluor
EFCOG Board of Directors

Norm Barker, Energy*Solutions*
Chair, EFCOG ISM/QA Working Group

ISM

Office of Environmental Management and Energy Facility Contractors Group 2010 Quality Assurance Improvement Project Plan

Introduction:

This Project Plan is jointly developed by the Department of Energy (DOE) Office of Environmental Management (EM) and the Energy Facility Contractors Group (EFCOG), to provide execution support to the EM Quality Assurance (QA) Corporate Board. The Board serves a vital and critical role in ensuring that the EM mission is completed safely, correctly, and efficiently.

The joint EM-EFCOG approach to enhancing QA signifies the inherent commitment to partnership and collaboration that is required between the contractor community and DOE to proactively improve performance of the EM mission and projects. This mandate is more important today than it has ever been as EM has the added responsibility to diligently leverage and apply American Recovery and Reinvestment (ARRA) funds to accelerate completion of its mission and create thousands of new jobs to revitalize the economy.

The Project Plan documents a formal approach for managing the scope of the EM/EFCOG Quality Assurance Improvement Project. It builds on and leverages the success and operating experience gained from implementation of QA programs already in place at various EM Sites. The Project Plan will be updated as needed to reflect ongoing progress.

Scope:

The scope of this Project Plan is to address the priority QA focus areas identified by the EM QA Corporate Board. The Project Plan's scope includes the three (3) project focus areas for 2010 identified during the EM QA Corporate Board meeting conducted on February 22, 2010 as well as one additional focus area that was identified during the meeting and added based on the current priorities of the field offices (4 total focus areas). The Project Plan provides a description of the initial project focus areas and agreed upon actions and milestones. Additional project focus areas or related initiatives may be added to the scope of this Project Plan upon approval by the EM QA Corporate Board.

The key expectations for each project focus area lead are as follows: 1) provide actionable recommendations with specific path forward to the Board for its consideration, and 2) provide the Board with an analysis/assessment of the degree to which impacts and implications of the proposed actions on EM complex have been considered.

Project Organization:

The overall Project Managers for the joint EFCOG-EM Quality Improvement Initiatives are:

1. Mr. Bob Murray, Acting Director, EM Office of Standards and Quality Assurance , EM-23, and
2. Representing EFCOG, Mr. Chris Marden, Corporate Director QA, Energy*Solutions*.

The project's Executive Committee includes:

- Dr. Steve Krahn, Deputy Assistant Secretary, Office of Safety and Security Program, EM-20 (EM/HQ);
- Mr. Joe Yanek, Executive Director Environmental Safety, Health, & Quality, Fluor, representing the EFCOG Board of Directors; and
- Mr. Norm Barker, Vice President, Integrated Safety Management (ISM)/QA, Energy*Solutions*, Chairperson, EFCOG ISM/QA Working Group.

Additional leadership may be added to the Project Executive Committee, as needed, to further facilitate and support execution of the Project Plan.

Each project area will have designated EM and/or EFCOG Leads. These individuals are expected to interface and coordinate completion of the project area milestones. A critical aspect of the interface and coordination responsibility includes reaching out to appropriate stakeholders within the EM federal and contractor community. This is to ensure that any resultant strategy and recommendation has been fully considered so the Board can make informed decisions regarding any potential programmatic implications, resource requirements, and expected corporate benefits. To this end, the designated EM and EFCOG leads should ensure representatives from each EM site are included in the completion of the focus area deliverables.

Figure 1 presents the project organization and identifies the EM and EFCOG leads for each of the Project focus areas. Additional line participants from both EM operations and contractors will be added to the project teams as needed to ensure accomplishment of the specific objectives.

Key Project Personnel Roles and Responsibilities:

The Project Executive Committee is responsible to:

- Provide advice and counsel to the Project Managers as needed. Ensure barriers to project implementation, issues, and concerns identified by the Project Managers are effectively addressed and resolved. Provide quarterly progress review of agreed upon project focus area milestones. Provide technical expertise and feedback to the project leads, as needed, and to ensure its successful completion.
- Provide periodic status updates to EM senior management, EM Vice President's Forum, and the EFCOG Board of Directors.

The Project Managers are responsible to:

- Lead the overall project coordination effort consistent with the Project Plan, associated schedules, and agreed upon deliverables.
- Work with EM staff and EFCOG's ISM/QA Working Group Chair to identify Project Focus Area Leads and participants.
- Regularly monitor project area milestone completion progress and provide guidance and direction to Project Area Focus Leads as needed.
- On a quarterly basis, report Project Plan progress to the Project Executive Committee and the EM QA Corporate Board.

The Project Focus Area Leads are responsible to:

- Identify and obtain EM and EFCOG participants to support completion of project focus area milestones.
- Define and implement the strategy for accomplishing the project focus area milestones.
- Lead efforts to successfully complete assigned milestones and deliverable commitments.
- Coordinate project focus area activities with his/her designated co-lead (contractor or federal).
- Define project focus area completion approach, strategy, and coordinate activities of project area teams.
- Ensure outreach to a broad spectrum of the EM community to identify any programmatic implications resulting from recommendations and products.
- Participate in project status meetings and teleconferences.
- On a quarterly basis, report progress to the designated EM and EFCOG Project Managers. Included in the briefing is an assessment of any programmatic impacts, resource requirements, and characterization of expected corporate benefits.

Project Execution and Performance Management:

This project will be executed consistent with EM project management processes and practices. All key decisions will be coordinated with the Project Managers and, as appropriate, with the respective Project Focus Area Leads. Formal project status reviews of the Project Focus Areas will be held with the Project Executive Committee on a quarterly basis during the duration of the project.

Day-to-day management of specific project milestones, task activity scheduling, and task completions is the direct responsibility of the Project Focus Area Leads. In order to declare a milestone complete, the Project Focus Area Leads must issue the necessary supporting documentation to the Project Managers for acceptance. Any changes to a designated project area scope, milestones, or overall target completion dates must be

approved by the Project Managers. The Project Managers will review and coordinate all proposed changes with the Project Executive Committee.

Review and Comment Process for Project Focus Areas:

The Project Focus Area Leads will follow a progressive three-tier review process for all deliverables or products. The focus of each level of review is to assess adequacy of the technical approach, soundness of the underlying assumptions, and progression of the project is on a path to successful completion consistent with the agreed upon schedule. Specifically; the reviews consist of:

- First Level of Review (2 weeks review/2 weeks comment resolution): Project Managers (Bob Murray and Chris Marden)
- Second Level of Review (1 week review/1 week comment resolution): Executive Committee (Steve Krahn, Joe Yanek, and Norm Barker)
- Third Level of Review: EM QA Corporate Board Members (voting and non-voting Full Members)

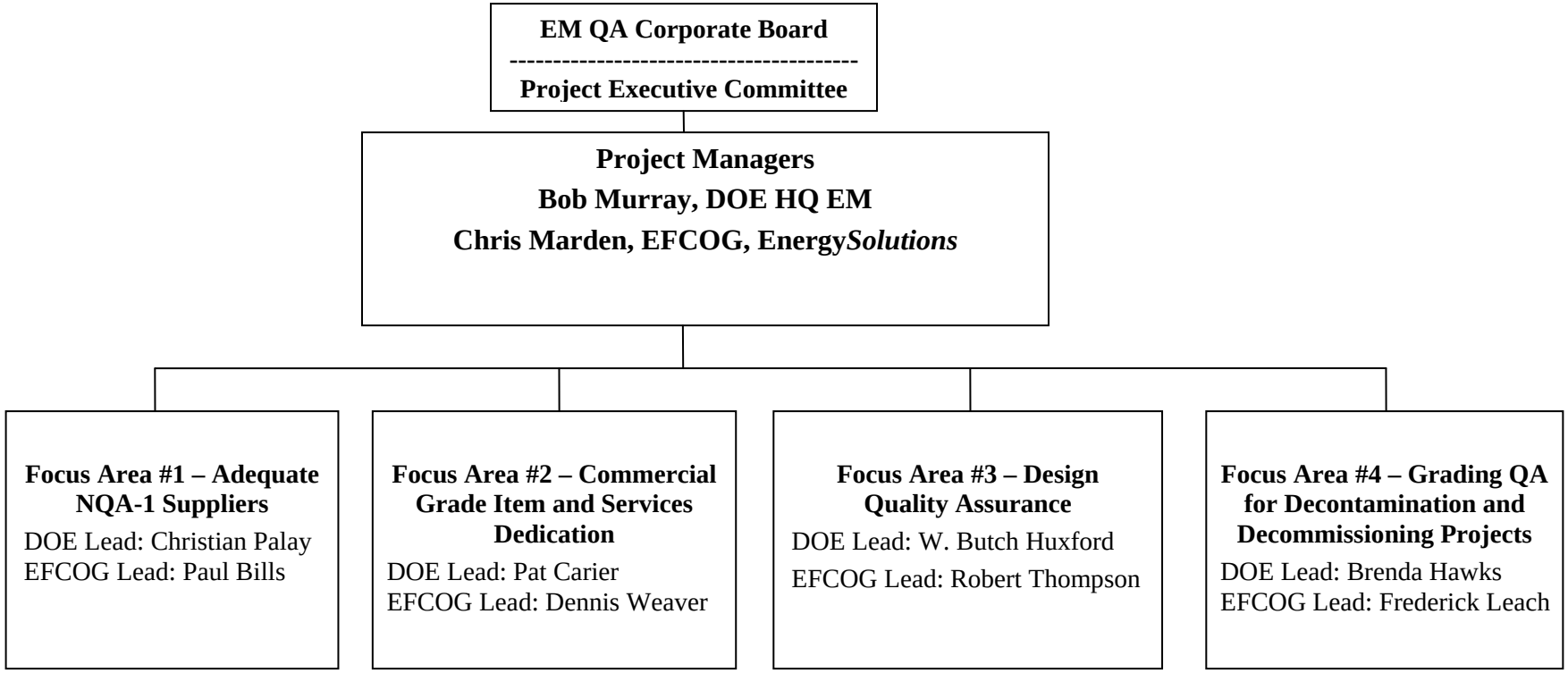
Communications:

The Project Managers will conduct quarterly teleconferences to discuss status of specific project area progress with the Project Focus Area Leads. Additional conference calls or meetings will be scheduled as needed. To facilitate timely and cost-effective communication, to the extent practical email and video-conferencing will be used, Individual Project Focus Area teams will determine the communication needs and methods best suited for their specific teams.

Project Termination:

The Quality Assurance Improvement Project Plan will be maintained in an active state until all actions are completed, or, the EM QA Corporate Board (by vote) terminates the Project.

Figure 1 - Quality Assurance Program Improvement Project Organization



Quality Assurance Project Focus Areas

Project Focus Area #1 –NQA-1 Suppliers

Target Completion Date: December 20, 2011

Background:

A previous Project Focus area team was assigned the tasks of increasing nuclear grade suppliers, developing a common Supplier Evaluation Program and developing a Supplier Alert System. During 2009, these tasks were completed and approved by the EM Corporate QA Board; however, it is recognized that expanding availability of NQA-1 qualified suppliers is an on-going corporate need and challenge. Due to this priority, the NQA-1 Suppliers will continue as a focus area in 2010.

The implementation of the Joint Supplier Evaluation Program (JSEP) that was approved by the EM Corporate QA Board needs to be monitored and managed to ensure effective implementation across the EM complex. Financial and human resources approved by the Board, but not yet transferred to the proper organization and put into force, need to be a primary focus of this team. In order for the JSEP to be fully effective and efficient, there needs to be a high level of participation by EM contractor organizations. This focus area team needs to evaluate levels of participation across the EM complex and develop necessary actions to ensure that adequate participation is obtained and maintained.

Scope:

- Monitor implementation of the JSEP as approved by the Board in 2009.
- Obtain funds and resources approved by the Board and implement the Supplier Information Database.
- Develop actions for increasing and maintaining a high level of participation by EM Contractor organizations in the JSEP.

Status:

- EM-23 has transferred funds for the Supplier Information Database to the DOE-Idaho office.
- EM-23 along with DOE-Idaho has approved the statement for work and the release of funding is imminent.

DOE Lead: Christian Palay

EFCOG Lead: Paul Bills

Support Team: Michael Mason and Brian Anderson

Focus Area #1 Project Milestones:

Task #	Estimated Due Date	Task Description	Deliverable	Deliverable To Be Submitted to Project Managers
1.1	9/30/10	JSEP Electronic System Information Up Load	Functional database	Yes. Demo of the functional database
1.2	01/07/11	Develop Common Commodity List to include EM Commodities	EM Commodities List	Yes. A JSEP program description document that reflects actual work practices associated with the JSEP
1.2.1		Further defined roles and responsibilities	A description of the roles and responsibilities for each participant in the JSEP	
1.2.2.		Establish primary POCs at each site	A list of the POCs from each site that aligns with the established roles and responsibilities for the JSEP	
1.2.3		Further define audit reporting minimum requirements	A description of how to consistently develop supplier audit reports that meets a standard for the majority of sites to be able to use	
1.2.4		Define review and approval process	A description of supplier audit reports are reviewed and approved	
1.2.5		Develop formal Lead Auditor review and approval validation	A description of the process to review and approve of Lead Auditor credentials	
1.2.6		Obtain auditor disclosure statements	A form that establishes auditors participating in JSEP will not disclose results outside of JSEP	
1.2.7		Develop new NQA-1 matrix documents for EM commodities (materials and services).	A matrix that establishes the baseline NQA-1 Requirements used to evaluate suppliers.	
1.2.8		Conduct gap analysis on existing NQA-1 matrix documents specific to each commodity.	A description of the gasps between the established NQA-1 matrix documents and suppliers that may require special evaluations	
1.3	12/20/11	Operations and Maintenance Assessment of JSEP	Fully Functional JSEP	Yes. An annual status report
1.3.1	TBD	Annual JSEP strategy and scheduling meeting with participants	Annual JSEP schedule	Yes. An annual schedule for resource planning
1.3.2	TBD	Periodic conference calls with participants	Schedule updates	Yes. An annual schedule for resource planning

Project Focus Area #2 – Commercial Grade Item and Services Dedication Implementation

Target Completion Date: December 31, 2010 (except for oversight of CGD classes)

Background:

The challenge of building, operating, and maintaining nuclear facilities is increasing in today's marketplace. Many suppliers that previously supported the construction of commercial nuclear power plants have discontinued maintenance of their nuclear grade quality programs. As a result, EM construction and operational projects have had to rely more on the procurement of components either through alternative suppliers or by purchasing commercial grade items and dedicating them for safety-related use.

In October 2006, the Principal Deputy Assistant Secretary for EM requested that every project within EM assess its own vendors and suppliers for how Commercial Grade Dedication (CGD) is currently being defined and implemented. A summary of the results of the evaluations were expected by November 30, 2009.
To provide corporate assistance, the Office of Standards and Quality Assurance, EM-23, developed, organized, and delivered a series of CGD training courses across the EM complex for EM Federal and contractor personnel. Included was a CGD Train-the-Trainer to facilitate access to a pool of qualified CGD trainers to expand site sponsored CGD training capacity.

Scope:

- Develop formal EM guidance on commercial grade dedication
- Monitor implementation of actions approved by the Board in 2009
- Develop actions to continue to increase the number of qualified trainers.
- Development of a “common” CGD procedure for use across the EM complex
- Develop actions to improve the self-assessments of CGD activities

Status:
Training has been provided to approximately 300 people at all the major EM Sites (Savannah River, Hanford, Oak Ridge) with a current cadre of 30 trainers being available to teach additional classes. Future classes will be considered for oversight by EM-23 and this team’s subject matter experts to ensure that the rigor of the training is maintained.

Proposed EM guidance on CGD has been drafted by EM-23 and will be turned over to this Project Team for socialization amongst the various groups in the EM Complex and finalization.

EFCOG has begun work to develop a standardized process for performing CGD. EM-23 has been providing oversight of this effort and the work will continue with participation/oversight as part of this focus area.

DOE Lead: Pat Carier – DOE

EFCOG Lead: Dennis Weaver

Support Team:

Proposed project team composition includes contractor and/or federal representatives from each DOE-EM Site

- Richland
- River Protection
- Savannah River
- Idaho
- Oak Ridge
- Portsmouth/Paducah
- Consolidated Business Center Representatives
- Carlsbad

Focus Area #2 Project Milestones:

Task #	Estimated Due Date	Task Description	Deliverable	Deliverable To Be Submitted to Project Managers
1	**08/06/10**	**Develop EM Guidance on Commercial Grade Dedication**	**Recommended guidance**	**N/A**
1-1	06/11/10	EM-23 to transition draft guidance to Project Team Lead	Draft guidance	No
1-2	06/25/10	Project Team to review and revise guidance and send to field elements for comment (including consistency verification with Subpart 2.14 of NQA-1)	Draft guidance	No
1-3	07/23/10	Comment period ends	N/A	N/A
1-4	08/06/10	Resolve field element comments and finalize guidance.	Recommended Guidance	Yes
1-5	08/06/10	Draft endorsement and transmittal memo for Recommended Guidance from EM-1 to all Field Elements	Transmittal Memo	Yes
2	**12/31/10**	**Develop, with EFCOG, a common process to perform commercial grade dedication.**	**Recommended procedure with endorsement from EM**	**N/A**
2-1	07/30/10	Draft procedure for DOE/Contractor review and comment (including consistency verification with Subpart 2.14 of NQA-1)	Draft procedure	No
2-2	08/27/10	Comment period ends	N/A	N/A

Task #	Estimated Due Date	Task Description	Deliverable	Deliverable To Be Submitted to Project Managers
2-3	09/15/10	Resolve comments and forward through EFCOG the recommended procedure to all DOE contractors.	Recommended procedure	Yes
2-4	09/30/10	Draft endorsement and transmittal memo for Recommended Procedure from EM-1 to all Field Elements	Transmittal Memo	Yes
2-5	12/31/10	EM Sites to complete implementation of the Recommended Procedure	N/A	N/A
2-6	12/31/10	Develop a checklist to be used during audit/assessment of CGD program and implementation	Checklist	Yes
2-7	04/01/11	Assist EM-23 in assessing Recommended Procedure implementation at major EM Sites	Assessment Report	N/A
3	**08/20/10**	**Determine need for and conduct one additional Train-the-Trainer CGD Course**	**Course completed**	**N/A**
3-1	06/25/10	Determine need for additional Train-the-Trainer Course	Report to Project Team Lead and to Director, EM-23	Yes
3-2	07/16/10	Publish notice of class if needed	E-mail to EM QA Managers	No
3-3	08/20/10	Hold class	Training Roster	No
4	**09/30/11**	**Perform oversight of future CGD classes**	**Oversight Reports**	**N/A**
4-1	Case Basis	Upon notification of CGD training class the Project Team Lead will assist EM-23 in identifying available Subject Matter Experts to assist in oversight of the class	N/A	N/A

Project Focus Area #3 – Design Quality Assurance for Construction Projects

Target Completion Date: November 01, 2010

Background:

In 2009, EM issued an Interim Policy establishing the Code of Record (COR) concept for EM nuclear facilities. A COR serves as a management tool and source for the set of requirements that are used to design, construct, operate, and decommission a nuclear facility over its lifespan. Early establishment and lifecycle maintenance of applicable facility requirements are essential to provide for the protection of our workers, the public, and the environment. Consequently, the COR includes those requirements invoked during the design phase, and later used to initiate operations, to ensure they are available to all responsible parties during each lifecycle, organizational, and mission change.

Additionally; EM finalized the 2nd Edition of the DOE Standard Review Plan (SRP) for capital and major construction projects. SRP review modules are developed consistent with project expectations and requirements defined in DOE O 413.3A, Change 1, *Program and Project Management for the Acquisition of Capital Asset*, DOE-STD-1189-2008, *Integration of Safety into the Design Process*, and EM's internal business management practices. The 2nd Edition was completed and the official release memo was issued by EM in March 2010. The 2nd Edition consists of 29 stand-alone SRP review modules that provide EM's core expectations and technical framework associated with Critical Decision (CD) review and approval process. The disciplines addressed include Engineering and Design, Safety, Project Management, Quality Assurance, Environment, and Security. The Review modules are on the DOE EM website at http://www.em.doe.gov/Pages/StandardReviewPlanModules.aspx

Scope:

- Determine existing processes within the EM complex for ensuring quality in design control functions
- Develop best practices for consideration across the EM complex
- Specifically evaluate:
  - Records required to adequately meet NQA-1 requirements
  - Flow down of engineering requirements
  - Inspection and test requirements and acceptance criteria
  - Design definition, communication and verification
  - Quality Assurance groups' role in design control
  - Configuration management

Status:
Initiated team meetings and started work on the deliverables for the focus area.

DOE Lead: W. Butch Huxford

EFCOG Lead: Robert Thompson

Support Team:

Representatives from the following projects:

- Waste Treatment Plant
- Salt Waste Processing Facility
- Sodium Bearing Waste
- U233 Project
- DUF6
- Tank 48
- Deactivation and Decommissioning (D&D) site representatives
- Others as needed

Focus Area #3 Project Milestones:

Task #	Estimated Due Date	Task Description	Deliverable	Deliverable To Be Submitted to Project Managers
Start Date June 9, 2010 – following Board approval				
1	06/18/10	Identify FA3 team and initiate planning activities	Roster	Yes
2	07/19/10	Develop final scope of the effort, specifically addressing feedback from recent CPRs (e.g., Idaho). Include deliverables, such as: • Questionnaire to major projects describing existing practices	Scope outline	Yes
3	08/02/10	Deliver questionnaire to major projects	Questionnaire	No
4	09/01/10	Receive results from major projects	Completed Questionnaire	No
5	10/01/10	Provide analysis for PM review/calibration	Tables/charts/ text documents describing FA3's recommended path forward for ultimate deliverable	Yes
6	11/01/10	White Paper for EM consideration communicating Design Quality Assurance expectations/recommendations/etc.	White Paper	Yes

Project Focus Area #4 – Grading QA for Deactivation and Decommissioning Projects

Target Completion Date: N/A

Background:

Deactivation and Decommissioning (D&D) Projects present a challenge in the application of NQA-1. The focus of NQA-1 is on the development and maintenance of nuclear power quality assurance. The standard clearly states in the introduction that "This Standard focuses on the achievement of results, emphasizes the role of the individual and line management in the achievement of quality, and fosters the application of these requirements in a manner consistent with the relative importance of the item or activity." The relative importance of the facility and equipment is very low when the ultimate end state is to demolish and permanently dispose of the material. While it is very important that any items that are desirable to another project be preserved and the proper techniques are employed to prevent insult to the workers and/or environment during the D&D the end state must be remembered when establishing the quality requirements for the various stages of activities. Work must be accomplished in a quality manner and within contractual requirement; however, the establishment of the contractual requirements must consider the end state and hazards of the activity to be performed. Too many times, the end state is not kept in focus and the quality requirements for an operating or construction activity are employed on a D&D project resulting in higher costs that provide little to no addition to EM mission accomplishment or safety.

Scope:

- Enhance awareness of the need to properly grade activities.
- Take advantage of the allowance for grading.
- Provide some examples of things to consider when executing the grading and ways to grade.

Status:

1. Ensure EM Corporate Quality Policy allows and encourages grading – Complete
   - EM Corporate Quality Policy allows grading – "It is EM Policy that all EM projects will have a consistent quality assurance approach while allowing for grading based on importance to the EM mission and safety, and for site-specific requirements."

2. Ensure EM Quality Assurance Program Document, EM-QA-001, allows and encourages appropriate grading – Complete
   - EM Quality Assurance Program Scope states: "The requirements of the QAP are applied in a graded fashion commensurate with the type of work being performed and the importance of the work contributing to safe completion of the EM mission."

3. Evaluate NQA-1 to determine if it clearly allows for grading as needed in the DOE complex due to the significant variations in types of activities and contracts. - Complete
   - NQA-1 Introduction states: "This Standard focuses on the achievement of results, emphasizes the role of the individual and line management in the achievement of quality, and fosters the application of these requirements in a manner consistent with the relative importance of the item or activity."

4. Provide examples of things to consider when evaluation of grading. Complete

See Attachments. (Things to consider when evaluating grading of Quality Assurance Criteria; Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects; and ASME NQA-1, Part II Applicability)

DOE Lead: Brenda Hawks

EFCOG Lead: Frederick Leach

Support Team and Milestones:

The activities and milestones required to complete the recommendations for this focus area have already been completed and are in place. Additional examples will be added to the information provided in the attachments to address the Board's request. The remaining effort is for the EM QA Corporate Board to endorse the approach and flow the approach down through their individual organizations. This endorsement includes all EM federal sites and associated contracts.

Task #	Estimated Due Date	Task Description	Deliverable	Deliverable To Be Submitted to Project Managers
1	11/01/10	Obtain additional perspective from other D&D sites within EM.	N/A	No
2	01/01/11	Update the attachments/tables to provide examples of each grading.	Updated Table	Yes

Attachment A for Focus Area #4
Things to Consider when Evaluating Grading of Quality Assurance Criteria

Things to consider when evaluating grading of Quality Assurance Criteria:

- Scope of contract
- Length of contract
- Importance to EM Mission
- Size of contractor staff/employees
- Hazard level of activities (nuclear, security, chemical, industrial, electrical, etc.)
- Method of performance – direct, subcontract to qualified vendor, memorandum of agreement with other DOE Prime Contractors
- Complexity of work activities
- What is the end state for the facility/activity

Attachment B for Focus Area #4
Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects

NQA-1 Requirement		Grading
Part I Introduction	300 – States – "The organization invoking this Part shall be responsible for specifying which requirements, or portions thereof, apply, and appropriately relating them to specific items and services. The organization implementing this Part, or portions thereof, shall be responsible for complying with the specific requirements to achieve quality results."	As stated in this introduction, it is the responsibility of the contractor to specify which requirements and/or portions thereof are applicable. All of this should be included as it only establishes the allowance for grading and definitions.
1. Organization	300 – "When more than one organization is involved in the execution of activities,"	This requirement establishes basic organizational expectations. It should be noted that the Interface Control section does have the stipulation that "Where more than one organization is involved…" – this is typically done through Memorandums of Agreement (or whatever term specific contractors utilize) between various contractors for site activities. This is an acceptable means to achieve compliance as the agreement should clearly the appropriate interface authorities. Internal interfaces can be handled through a section in the QAP with very small simple contractors to eliminate the need for a formal document as the internal interfaces would not require a separate document.
2. Quality Assurance Program	200 – Indoctrination and Training - "Indoctrination and training shall be commensurate with scope, complexity, importance of the activity, and the education, experience, and proficiency of the person." 202 – Training -- "The need for a formal training program…. Shall be determined. Training shall be provided, if needed…	Section 200 – provides the basis for grading in this area. Scope of the contract, complexity of the contract, the importance of the activity to DOE/regulators/etc., and the people assigned. This section clearly allows for small contractors especially when have short term contracts to rely on the education/experience/proficiency of their staff in lieu of elaborate procedures. While this would most likely not be allowed for a large contactor or one with extensive operating time frame, when the contractor is very small and short term the development of some procedures might not be warranted and the QAP can clearly state the reason specify the qualification of personnel performing the activity versus development of elaborate procedures. (Procedures for field operations would still be expected.) Section 202 – Training requirements can be very limited based on the scope of work. Compliance with OSHA requirements and basic training for others might be all that is needed. The QAP can clearly specify this. When in a nuclear hazard

Attachment B for Focus Area #4
Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects

NQA-1 Requirement		Grading
		category 1, 2, or 3, the training requirements are typically in accordance with DOE O 426.2 (the old 5480.20) for those individuals who can impact the safety basis through their involvement in the operation, maintenance, and technical support. Section 300 – This section states shall specify the required qualification. One way to grade this is to state the contractor will not qualify any individual for activities like Nondestructive examination and tests to verify quality. All such activities will be performed by a procured source that has the required qualification program. 303/304/305 - Qualifications of the "auditing" individuals, warrants evaluation for befit of formal program when the contractor is small, the scope is very limited, and/or the period of performance is short. Allowance for a trained, educated, experience cadre can be frequently justified in Deactivation and Decommissioning activities. 400 – The records of those individuals performing NDE need to be maintained even if it is in the procurement documentation. The records of the Lead Auditor personnel can be handled in a graded manner.
3. Design Control		Typically Deactivation and Decommissioning contractors do not do a lot of "design" activities. Therefore, this requirement is typically not applicable. Even if some very simple Design activities are required for say a simple radiological containment, the application of Requirement 3 might not be warranted. Contractors doing formal "design" activities are clearly known and are expected to fully implement this requirement.
4. Procurement Document Control	100 – "… The extent necessary, procurement documentations shall require Suppliers to have a quality assurance program consistent with the applicable requirements of this Standard."	The procurement process for Deactivation and Decommissioning contractors needs to be graded based on the end state for the facility/item. The period of performance needs to be taken into consideration for procured items. When the time period is extremely short, justification on the level of procurement can potentially be downgraded as the increased level does not enhance safety or EM mission accomplishment. Procurement process can also be utilized for procurement of specialty personnel to prevent the need to establish extensive programs like Nondestructive Examination, Inspection and Test, and even Lead Auditor. This is a good way to grade systems and utilize another section/requirement to meet the needs of the unique contacting

Attachment B for Focus Area #4
Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects

NQA-1 Requirement		Grading
		arrangements.
5. Instructions, Procedures, and Drawings	100 – "… The activity shall be described to a level of detail commensurate with the complexity of the activity and the need to assure consistent and acceptable results. The need for, and level of detail in, written procedures or instructions shall be determined based upon complexity of the task, the significance of the item or activity, work environment, and worker proficiency and capability (education, training, experience)."	This is a very simple requirement and no grading of the actual requirement is needed. The requirement itself requires grading of the implementation as stated in the requirement.
6. Document Control		This requirement is very basic in concept and the requirements can be met with simple processes based on the contract scope. The main requirement is that documents be controlled to ensure that correct documents are being employed. The contractor can utilize very simple systems to meet this requirement when the complexity of operations is simple. The more complex the activities and organizations involved the more complex the document control process will need to be.
7. Control of Purchased Items and Service		This requirement provides requirements that are based to ensure the Supplier provides the items or service in accordance with the requirements of the procurement documents. The real grading in this requirement is more in the establishment of the "requirements" for the procurement. When establishing the requirements for the procurement the contractor needs to take into consideration the D&D activity and the length of time the item or service will be needed as well as safety and other quality requirements.
8. Identification and Control of Items		This requirement ensures that only correct and accepted items are used or installed. The grading in this area is not as much in the application of the control but rather in the requirement established for the items acceptable for service. With D&D activities, there can be greater allowance for use of items.
9. Control of Special Processes	100- "Special processes that control or verify quality, such as those used in welding, heat treating, and nondestructive examination, shall be	When "special processes" are required, this requirement needs to be met fully. However, in D&D activities, one way to meet this requirement is through procurement of qualified individuals that have qualified procedures. This prevents the prime

Attachment B for Focus Area #4
Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects

NQA-1 Requirement		Grading
	performed by qualified personnel using qualified procedures in accordance with specified requirements.	contractor from having to have the programs and qualification processes in place.
10. Inspection		This requirement is graded in the determination of characteristics subject to inspection and inspection methods. For example, in lieu of inspecting gages, they can be sent out to a qualified supplier who does the inspection and calibration. Another example is receipt inspection, this process can be limited if the supplier has a robust quality program or the prime contractor could hire an independent third party to do the inspections required.
11. Test Control		This requirement can be graded as most D&D contractors do not execute computer program testing; therefore, they would not have to have a program to execute this function. Testing should be limited in D&D activities for the most part and the contractors programs can be graded based on the characteristics to be tested and the test methods to be employed. As this is highly contractor dependent, each contractor would have to evaluate the types of testing required and grade their program based on that evaluation.
12. Control of Measuring and Test Equipment	100 – "Tools, gages, instruments, and other measuring and test equipment used for activities affecting quality shall be controlled, calibrated at specific periods, adjusted, and maintained to required accuracy limits."	The grading of this requirement is very dependent on the size and type of work the contractor will be executing. Some D&D activities require extensive control of measuring and test equipment while others require very little. In either case, the contractor needs to evaluate the level of in-house program they need to maintain and what part is better to procure through a supplier. This evaluation and final determination is the basis for grading the contractors program in this area.
13. Handling, Storage, and Shipping		For many D&D activities there is little on site storage of materials and shipping is executed in accordance with Department of Transportation requirements. This requirement can be graded based on application of the DOE Orders, OSHA compliance, and other contractual requirements that govern handling, storage, cleaning, packaging, shipping, and preservation of items. Basically, this requirement should be met if the contractor complies with the requirements in most D&D contracts.
14. Inspection, Test, and Operating Status	100 – "The status of inspection and test activities shall be identified on the items or in documents traceable to the items where it is necessary to ensure that required inspections and test are performed and to ensure that	This requirement is very basic and can be ensured in many ways. The grading of this requirement is in the methods utilized to document and identify the inspection, test, and operating status.

Attachment B for Focus Area #4
Examples of Ways to Grade NQA-1 Requirements for Deactivation and Demolition Projects

NQA-1 Requirement		Grading
	items have not passed the required inspections and tests are not inadvertently installed, used, or operated.	
15. Control of Nonconforming Items		This requirement is very basic and can be ensured in many ways. The grading of this requirement is in the methods utilized to document and identify the inspection, test, and operating status. One way grading is different for D&D is that there is a greater potential for acceptance of an item in a D&D type activity as the justification for usage is more flexible.
16. Corrective Actions		The requirement can be graded in the manner in which the identification, cause and corrective actions are generated and documented. The system used to track the condition reports and actions can be another manner in which this requirement can be graded. The grading can be applied based on the type/scope of the activity like D&D as well as on the size of the contractor and period of performance.
17. Quality Assurance Records		The grading in this requirement for D&D is in the designation of what is a quality assurance record. As the facility is to be demolished, this allows for greater flexibility in the determination of the length of time the records need to be maintained for some items. Also, grading can be evaluated as to whom will hold the records, through contract negotiations, the records could be turned over to DOE earlier in the process thereby reducing the storage burden on the contractor. One costly area is the storage of records and the requirements for those facilities. Again, through contract negotiations, this can be graded providing the records are maintained and final disposition is appropriately achieved.
18. Audits		The number of formal Audits for D&D work should be tailored and graded based on the type of activities being performed. One way of grading is in the determination of the experience and training required to lead and participate in the audits.

Attachment C for Focus Area #4 - ASME NQA-1, Part II Applicability

The applicability of each Subpart II requirement is discussed and potential contract requirements that govern the requirement are identified that can be used in lieu of ASME NQA-1 as the applicable standard.

ASME NQA-1 2004, Part II, Subparts:	Applicability
2.1 Quality Assurance Requirements for Cleaning of Fluid Systems and Associated Components for Nuclear Power Plants	**Not applicable** to the majority of D&D contracts/Scope of Work.
2.2 Quality Assurance Requirements for Packing , Shipping, Receiving, Storage, and Handling of Items for Nuclear Power Plants	**Not applicable** to the majority of D&D contracts/Scope of Work. Contractors normally implement the following contract requirements for these work elements: DOE O 460.1B, Packaging and Transportation Safety DOE O 460.2A, Departmental Materials Transportation and Packaging Management DOE M 460.2-1A, Radioactive Material Transportation Practices
2.3 Quality Assurance Requirements for Housekeeping for Nuclear Power Plants	**Not applicable** – this Subpart applies to Housekeeping during construction of facilities. For D&D activities normally implement applicable OSHA requirements and DOE O 5480.19, Conduct of Operations.
2.4 Installation, Inspection, and Testing Requirements for Power, Instrumentation, and Control Equipment at Nuclear Power Plants	**Not applicable** to the majority of D&D contracts/ Scope of Work. One way contractors meet this is by implementing NFPA 70 – 2008 National Electric Code and NFPA 70E - 2009 Standard for Electrical Safety in the Workplace
2.5 Quality Assurance Requirements for Installation, Inspection, and Testing of Structural Concrete, Structural Steel, Soils, and Foundations for Nuclear Power Plants	**Not applicable** – this does not apply to operations and is not part of the majority of D&D contracts/
2.7 Quality Assurance Requirements for Computer Software for Nuclear Facility Applications	**Applicable** to the current scope of operations. DOE contractors implement ASME NQA-1 2004, Part II, Subpart 2.7 as applicable to the scope of work.
2.8 Quality Assurance Requirements for installation, Inspection, and Testing of Mechanical Equipment and Systems for Nuclear Power Plants	**Not applicable** to the majority of D&D contracts/Scope of Work.
2.15 Quality Assurance Requirements for Hoisting, Rigging, and Transporting of Items for Nuclear Power Plants	**Not Applicable** to the majority of D&D contracts/Scope of Work. The requirement is written for hoisting, rigging, and transporting during construction. Most DOE contractors implement DOE-STD-1090-2007, Hoisting and Rigging.
2.16 Requirements for the Calibration and Control of Measuring and Test Equipment Used in Nuclear Facilities	**CANCELLED**

Attachment C for Focus Area #4 - ASME NQA-1, Part II Applicability

ASME NQA-1 2004, Part II, Subparts:	Applicability
2.18 Quality Assurance Requirements for Maintenance of Nuclear Facilities	**Not Applicable** to the majority of D&D contracts/Scope of Work. Most DOE contractors implement the requirements in accordance with DOE Order DOE O 433.1A, Maintenance Management Program for DOE Nuclear Facilities and DOE O 433.1A Implementation Matrix.
2.20 Quality Assurance Requirements for Subsurface Investigations for Nuclear Power Plants	**Not applicable** to the majority of D&D contracts/Scope of Work.