

NEPA Success Stories:

Articles from Department of Energy NEPA *Lessons Learned Quarterly Reports*

2016 Jun	Neutrino Project Award	An EA for the Long Baseline Neutrino Facility and Deep Underground Neutrino Experiment, an “international mega-science project,” earned special recognition.
2016 Jun	NAEP Stewardship Award	Los Alamos National Laboratory Trails Management Program earned Environmental Excellence Award for environmental stewardship. (See also September 2014 article.)
2015 Sep	Wind Programmatic EIS	Western Area Power Administration and the U.S. Fish and Wildlife Service jointly developed a programmatic EIS to streamline NEPA review of wind power development in the upper Midwestern states.
2014 Sep	Mitigation Action Plan	Los Alamos Field Office uses a site-wide Mitigation Action Plan and adaptive management techniques to track and efficiently manage commitments to mitigate adverse environmental impacts.
2013 Dec	Infrastructure Review	Bonneville Power Administration participation in a regional team advances infrastructure projects by streamlining permitting, environmental consultation, and regulatory compliance.
2011 Jun	ARRA NEPA Reviews (1)	Experience with Recovery Act projects shows that NEPA need not delay proposed action.
2011 Jun	Wind EA	Collaboration and communication resulted in an efficient EA process.
2010 Dec	CEQ's NEPA Success Stories	CEQ published a compendium of 13 case studies illustrating successful NEPA approaches.
2010 Mar	Idaho HLW	An EIS proved useful years later to support decisionmaking.
2009 Sep	ARRA NEPA Reviews (2)	Thousands of NEPA reviews for Recovery Act projects were accomplished efficiently and quickly.
2008 Dec	Western Corridors	Public comments resulted in consideration of alternative routes and operating procedures for transmission corridors.
2008 Mar	Complex Transformation	A combined programmatic and project EIS process successfully managed the consideration of thousands of public comments.
2007 Mar	SPR Flexibility	As a result of Hurricane Katrina, which occurred during EIS scoping, the EIS alternatives included an additional noncoastal site and mitigation to address hurricane threats.
2003 Dec	Wetland Protection	The EA process protected a restored wetland during planning for new construction.

2003 Sep	Watershed Protection	Stakeholder participation in the NEPA process resulted in additional alternatives with better environmental outcomes.
2003 Sep	Sagebrush Ecosystem	An EA for wildland fire management preserved and improved unique sagebrush steppe ecosystem at a DOE site.
2002 Dec	Wind Research Center	A site-wide EA provided an efficient framework for planning future activities.
2001 Jun	LANL Mitigation	Six years of implementing a mitigation action plan resulted in effective environmental protection.
2001 Mar	Bioremediation Research	An EA helped DOE plan an effective field-based research program to better understand bioremediation processes.
2000 Jun	LANL Fire (1)	A wildfire scenario was added to accident analysis, based on comment on draft EIS. Based on the analysis, DOE undertook immediate action to reduce risk.
2000 Sep	LANL Fire (2)	Mitigation greatly reduced the severity of impacts from a major wildfire.
2000 Mar	Hanford Land Use Plan	The NEPA process, with extensive tribal participation, for a site-wide land use plan protected unique habitat and biological resources while promoting future industrial development.
2000 Mar	Surplus Plutonium	A NEPA tiering strategy, information provided via procurement, and teamwork aided a complex decisionmaking process.
1999 Jun	Tritium Trilogy	Carefully coordinated NEPA processes were used to address complicated interrelated decisionmaking.
1999 Jun	LANL Habitat Plan	The NEPA process resulted in a site-wide habitat management plan (reducing future need for biological assessments), geographic information system (reference for future project analyses), and endangered species protection.
1999 Mar	SPR Pipeline	Integrating NEPA and the Section 404 permit processes proved efficient and resulted in mitigation commitments.
1997 Dec	NPR Sale	The NEPA process resulted in enforceable mitigation commitments for biological and cultural resources.
1996 Mar	Hanford Tanks	Public participation in NEPA process resulted in changes to the scope of the proposed project. The NEPA process resulted in enforceable mitigation commitments.

Neutrino “International Mega-Science Project” EA Team Earns Office of Science Award

By Peter Siebach, NEPA Compliance Officer, Integrated Support Center – Chicago Office

DOE’s Fermi Site Office is pursuing research intended to reveal the mysteries of neutrinos – tiny, subatomic fundamental particles – and determine their role in the make-up of the universe.

To support this research, the Fermi Site Office prepared an EA for the Long Baseline Neutrino Facility (LBNF) and Deep Underground Neutrino Experiment (DUNE) and issued a Finding of No Significant Impact (FONSI) (DOE/EA-1943, September 2015).

The EA preparation team, including three NEPA Compliance Officers (NCOs), received a Special Act Award from the Office of Science. The EA team consisted of Mike Weis (Manager) and Rick Hersemann (NCO), Fermi Site Office; Michelle McKown and Brian Quirke, Chicago Office; Gary Hartman (NCO, now retired), Oak Ridge Office; and Kim Abbott, Berkeley Site Office. I served as the Team Lead, NCO for the LBNF/DUNE Project, and NEPA Document Manager. Our team also was a finalist in the Mission Support Team of the Year competition sponsored by the [Chicago Federal Executive Board](#).

A Unique Project

LBNF/DUNE will employ an existing particle accelerator at the Fermi National Accelerator Laboratory (Fermilab), near Batavia, Illinois, to generate a neutrino beam and direct it 800 miles away. The neutrino beam will travel through the Earth to a detector about a mile below ground at the Sanford Underground Research Facility, a repurposed gold mine in Lead, South Dakota. Neutrinos are so small they can travel directly through the Earth and not be expected to come into contact with a single atom of pre-existing matter.

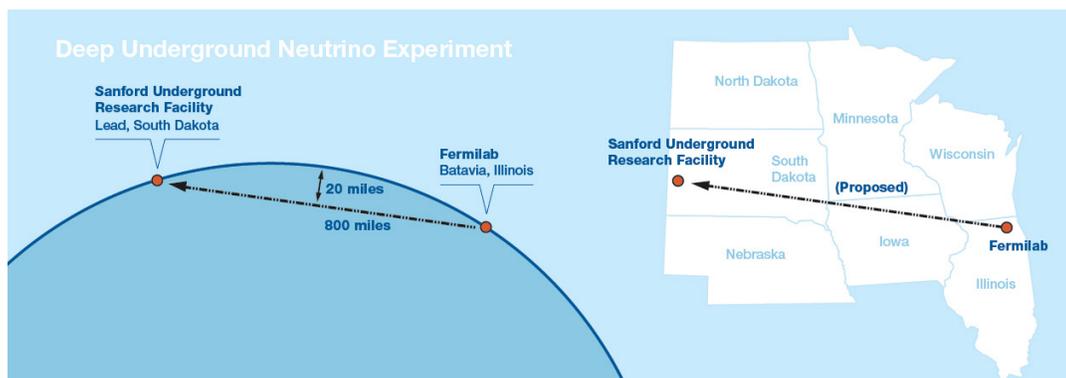
Neutrinos naturally transform themselves by oscillating back and forth between three different states or “flavors” (muon neutrinos, electron neutrinos, and tau neutrinos). As summarized in the FONSI, “LBNF/DUNE would enable the most precise measurements yet of this neutrino oscillation phenomenon, which could potentially help physicists discover whether neutrinos violate the fundamental matter-antimatter symmetry of the Universe. If they do, then physicists would be a step closer to answering the puzzling question of why the Universe currently is filled preferentially with matter, while the antimatter that was created equally by the Big Bang has all but disappeared.”

Successful Partnerships and Outreach

The EA team’s success depended on innovative internal and external partnerships. A charter signed by four Office of Science field organizations assigned decisionmaking to the Fermi Site Office Manager. The DOE national laboratories associated with these offices and Sanford Underground Research Facility (a state laboratory) also signed the charter, ensuring that all involved in preparing the EA understood their responsibilities and were committed to open communications.

These primary partners reached out to other federal, state, and local government stakeholders to negotiate a programmatic agreement under Section 106 of the National Historic Preservation Act for protecting the mining legacy of the Lead Historic District. The team also established consulting relationships with 19 Indian tribes and, as documented in the programmatic agreement, agreed to sponsor educational and cultural initiatives and engage in ongoing consultations to protect cultural properties.

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Neutrinos created by the LBNF beamline will travel 800 miles to intercept DUNE’s massive, cutting-edge neutrino detector at the Sanford Underground Research Facility. The neutrino beam’s path will lead straight through the earth’s mantle. (Source: LBNF/Dune Project Website.)

EA Team Award *(continued from previous page)*

The EA team and partnering organizations conducted seven well-attended public meetings, each with a poster session that facilitated one-on-one interactions. One of the meetings was carried live on local cable television. Some stakeholders expressed concerns regarding potential impacts of the neutrino beams. (“Neutrinos arriving at [Sanford Underground Research Facility], or anywhere along their course from Fermilab, would not result in any radiation exposure,” states the FONSI.)

Other concerns involved potential impacts of facility construction at the Fermilab and Sanford sites (e.g., noise, vibration, groundwater contamination, and disposal of excavated rock). As a result of carefully nurtured partnerships and substantial outreach efforts, public concerns were addressed and critical stakeholder relationships were strengthened.

LBNF/DUNE is the largest project currently in development by the Office of Science, which is the Nation’s primary supporter of fundamental research in the physical sciences. The participation of more than 700 collaborating scientists and engineers from 23



The EA analyzed disposal of 800,000 tons of excavated rock, conveyed by truck or conveyor system to the Homestake Mine Open Cut. Lead’s City Commission in May unanimously approved the conveyor system, the EA’s preferred alternative.

countries led to LBNF/DUNE being characterized as the “International Mega-Science Project.” Additional information is available on the project’s [website](#) or contact me at peter.siebach@science.doe.gov. 

NAEP Environmental Stewardship Award Earned by LANL Trails Management Program

The NAEP Board of Directors presented nine Environmental Excellence Awards for significant achievements in environmental practice.

The 2016 Environmental Stewardship Excellence Award went to DOE's Los Alamos National Laboratory (LANL) Trails Management Program. The use of trails at LANL is one of the benefits of working and living in Los Alamos County, New Mexico. There was no DOE or LANL policy or mechanism, however, to balance recreational trails use on LANL property with environmental, cultural, safety, security, and operational concerns. In 2003, DOE's National Nuclear Security Administration (NNSA) directed LANL to establish such a program and issued an EA, finding of no significant impact, and mitigation action plan.

The LANL Trails Management Program is implemented through individual projects, including measures for planning, repair and construction, environmental protection, safety, security, and end-state conditions assessments. Mitigation commitments include determining appropriate closures and restrictions, and supporting the use of volunteers for trail maintenance projects. The Trails Working Group – representatives of LANL, neighboring jurisdictions, and other stakeholders – has met regularly for 13 years to provide guidance and to integrate trail management decisions across jurisdictional boundaries.



Mitigation measures decrease the risks associated with recreational use of LANL lands, such as the Anniversary Trail, which offers views of the Rio Grande Valley and Sangre de Cristo Mountains. (Photo: Phillip Noll)

State Review Wins NEPA Award

The 2016 NEPA Excellence Award recognized a California Department of Food and Agriculture program environmental impact report (PEIR) for the *Statewide Plant Pest Prevention and Management Program*. The PEIR constitutes the program's compliance with the California Environmental Quality Act (CEQA) and covers a broad range of activities, including pesticide use, trapping surveys, promulgation of quarantine regulations, and rapid response eradication measures. The PEIR's comprehensive human health and ecological risk assessments evaluate hundreds of pest management scenarios, said NAEP's award citation, and incorporate science-based mitigation measures to protect the public, agricultural workers, and the environment. A CEQA tiering strategy allows the efficient incorporation of new technologies and activities as they become available.

LESSONS LEARNED

September 1, 2015; Issue No. 84

Third Quarter FY 2015

Programmatic EIS Posed Many Challenges, Offers Immediate and Lasting Benefits

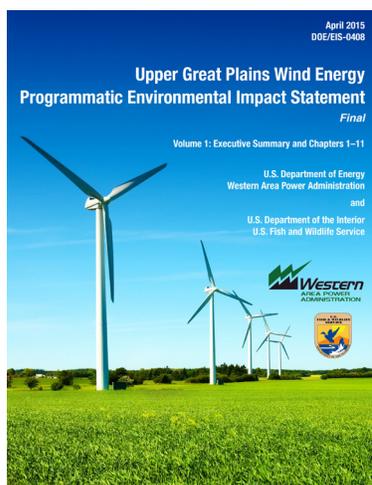
By: Matt Marsh, Mark Wieringa, and Micah Reuber, Western Area Power Administration

Programmatic consideration of environmental impacts and mitigation is a pathway to streamlining NEPA review. The proposals in this example share a common technology (wind energy), geographic scope (upper Midwestern states), and federal action (permitting the interconnection of a new electricity generating facility to the transmission system owned and operated by Western Area Power Administration). The joint lead agencies persisted in addressing many challenges, completed a programmatic EIS (PEIS), and found that it is yielding immediate efficiencies in tiered project-level reviews.

The Upper Great Plains (UGP) area, including all or parts of Iowa, Minnesota, Montana, North Dakota and South Dakota, has a high potential for wind energy development because of widespread strong winds. To address environmental concerns associated with such development, Western Area Power Administration (Western) and the U.S. Fish and Wildlife Service (USFWS) used a programmatic EIS to streamline the NEPA review process and implement cost effective mitigation strategies.

As joint lead agencies, Western and the USFWS prepared the *Upper Great Plains Wind Energy Programmatic Environmental Impact Statement (DOE/EIS-0408; April 2015)* to

- (1) Assess the potential environmental impacts associated with wind energy projects that may interconnect to Western's transmission system or that may include placement of facilities on grassland or wetland easements managed by the USFWS within the UGP Region; and
- (2) Evaluate how environmental impacts would differ under alternative sets of environmental evaluation procedures, best management practices (BMPs) and



mitigation measures that the agencies could request project developers to implement.

Although the geographic scale of the analysis, the different objectives of the joint lead agencies, and the large number of individuals involved in the preparation and review of the document presented coordination and communication challenges, the PEIS – albeit 7 years in the making – is viewed as a worthwhile effort and valuable reference.

Lessons Learned: What Went Well

Preparation of the PEIS went very well during the planning stage (Summer 2008) and throughout the public scoping period (Fall 2008). Western received only positive comments on the project with the most common comment being, “Hurry up and get your PEIS for wind energy done so we [the wind developers and Western customers] can start using it.”

After delving into writing the PEIS, Western and the USFWS decided it would be best to also prepare a programmatic biological assessment (programmatic BA). Information for 28 species of concern was gathered and

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UGP Wind Energy PEIS

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analyzed. A comprehensive list of conservation measures (BMPs, minimization measures, avoidance measures, and mitigation measures) was developed for each species of concern.

To ensure that project developers using the PEIS will follow the programmatic BA, Western and the USFWS developed a review and approval system based on consistency forms and checklists of conservation measures for each species. If a wind project developer commits to implement the applicable conservation measures, Western's consultation responsibilities under Section 7 of the Endangered Species Act are concluded when Western and the USFWS review and sign the consistency forms; no separate Section 7 consultation is required.

Dispersed Team and Long Schedule Created Challenges

Most large NEPA projects depend on a well-functioning team, and this PEIS was no exception. Western, USFWS, and the PEIS preparation contractor needed to function effectively as an integrated multidisciplinary team of scientists, managers, specialists, biologists, and other team members.

One major challenge was coordinating a large team spread out over five states. Sit down meetings were infrequent due to travel time and cost, as well as difficulty in coordinating schedules. When problems arose – for example, regarding funding limits, schedule conflicts, or resource shortages – conference calls were scheduled almost immediately to start brainstorming on solutions.

Another major challenge was performing the NEPA analysis as joint lead agencies. A joint lead arrangement between a regulated agency and its regulator inevitably entails different perspectives and needs, and sometimes even opposing goals. Coordinating with the approval authorities in one's own agency can take some time, but coordinating approvals concurrently in two agencies multiplied the time required. Often, when decisionmakers in one organization would sign a document and send it to the other organization for signature, decisionmakers in the second organization identified additional changes, thus prompting another round of review.

During the nearly 7 years it took to complete the PEIS, loss of institutional knowledge from the inevitable staff retirements and transfers had a substantial impact on progress. Bringing new staff members up to speed also proved challenging.

At times, key individuals were not available when needed to schedule public scoping meetings, hearings, and document signings. Delays arose when the agencies waited



The UGP Wind PEIS evaluated measures to minimize impacts to the species of concern, including the greater sage grouse (left) and whooping crane, evaluated in the programmatic BA.

for input from those individuals before moving forward, or when the agencies moved forward without key input and needed to coordinate revisions based on that input when it was received later.

Another challenge was that the ESA status of several species analyzed in the programmatic BA changed during the consultation and review process, requiring substantial revision to both the programmatic BA and PEIS. Reaching agreement among the biologists was challenging – internally within each agency, between the two lead agencies, and with the cooperating agencies (Department of the Interior Bureau of Reclamation and Bureau of Indian Affairs, and Department of Agriculture Rural Utilities Service).

A critical issue was the sheer number of individuals involved with review of the document, and the inability for the designated point of contact to speak with one voice for all elements of the joint lead agencies. Decisions made and acted upon by the project team were often challenged at a later point by previously uninvolved parties. Concurrent initiatives, such as the USFWS Section 10 Wind Energy Habitat Conservation Plan effort, caused some project team members to feel that the separate efforts needed to be completely consistent in conservation measures and recommendations. The project schedule expanded accordingly.

How Tiering Will Work

In a [record of decision](#) signed July 14, 2015, Western selected the preferred alternative, which is also the environmentally preferable alternative, to adopt a standardized process for collecting information and evaluating the potential environmental impacts of wind energy interconnection requests. Western and/or the USFWS (as appropriate for a specific project) would coordinate with project developers during project planning

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UGP Wind Energy PEIS

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activities to identify the project-specific measures that would be applicable to each project. A project-specific NEPA analysis, either an EA or EIS, would be tiered from the PEIS provided that the proposed project incorporates the applicable BMPs and mitigation measures analyzed in the PEIS. The tiered NEPA document would summarize the information covered in the PEIS or incorporate it by reference. This approach would allow for more efficient NEPA documents that would properly focus on local or site-specific issues. If a developer does not wish to implement the evaluation process, BMPs, and mitigation measures identified for the proposed project, a separate consultation or NEPA evaluation that does not tier off the analyses in the PEIS would be required, as appropriate, to address specific issues.

A project-specific ESA Section 7 consultation will utilize the programmatic BA provided that the project implement applicable BMPs, minimization measures, mitigation measures, and monitoring requirements established in the programmatic BA. (Consultation under the National Historic Preservation Act Section 106 process and related tribal consultations will continue unchanged from the present practice, since these issues are very site-specific.)

Conclusion: It Was Worth It

The scope and complexity of this effort were daunting, especially in envisioning how all the complex components would work in concert. Administration policy and senior management support proved instrumental in completing the programmatic BA and the PEIS. Nevertheless, the geographic separation of contributors, their philosophical differences, and the agencies' conflicting needs and goals caused schedule slippage and additional expense.

Overall, the UGP PEIS for wind energy was a pioneering initiative; already several current and future developers are using the document. Making environmental reviews for proposed wind energy generation projects more efficient is good governance. Additional information is available on the [PEIS website](#) or contact Matt Marsh at mmarsh@wapa.gov. **LL**

Editor's Note: Matt Marsh is the NEPA Compliance Officer (NCO) for Western's Upper Great Plains Service Region and all three authors are NEPA Document Managers. Former NCO Nick Stas, who retired in the summer of 2014 (LLQR, June 2014, page 15), served as NEPA Document Manager until shortly before the Final PEIS was issued.

LESSONS LEARNED

September 2, 2014; Issue No. 80

Third Quarter FY 2014

Making the Most of Mitigation

By Karen Oden, NEPA Compliance Officer,
Los Alamos Field Office

The Los Alamos Field Office (LAFO) uses a comprehensive Mitigation Action Plan (MAP) to monitor and manage commitments to mitigate adverse environmental impacts associated with the 2008 *Los Alamos National Laboratory (LANL) Site-Wide Environmental Impact Statement (EIS) (DOE/EIS-0380)* and multiple project-specific EISs and environmental assessments (EAs). A MAP describes the plan for implementing commitments made in an EIS record of decision (ROD) to mitigate adverse environmental impacts, or mitigation commitments that are essential to render the impacts of a proposed action not significant. The DOE NEPA Order requires a publicly available annual report on progress made in implementing mitigation commitments and the effectiveness of the mitigation. (See *Key Requirements Involving Mitigation*, pages 5-6.)

Reorganizing the MAP Annual Report

The first NEPA document I reviewed as a new DOE employee at LAFO was a draft of the MAP Annual Report for Fiscal Year (FY) 2013. I was amazed by the range of the commitments by the LAFO NEPA program and the complexity of the LANL mission activities. I had many questions and realized that the MAP Annual Report could be a more useful tool if restructured using a consistent outline for each mitigation commitment:

- Why are we doing it?
- What we are trying to achieve?
- What actions were taken?
- Are the actions effective?
- Should we continue doing it?

The purpose of tracking mitigation is to ensure that DOE and LANL follow through on commitments to minimize, avoid, or compensate for the adverse impacts



The current site-wide approach for long-term protection of LANL's threatened and endangered species originated from the 1995 discovery of a nesting pair of Mexican spotted owls near a proposed explosives testing facility. (See LLQR, June 1999, page 1.) (Photo: Chuck Hathcock, Wildlife Biologist, LANL Environmental Protection Division)

of an action and, furthermore, to examine whether mitigation measures are effective and efficient. The reorganized [MAP Annual Report for FY 2013](#) (issued in January 2014) first discusses each mitigation action in the body of the report and then summarizes all actions in a tracking table that also identifies the responsible organization. The FY 2013 MAP Annual Report answers a series of questions:

NEPA and Other Drivers: Which NEPA document, DOE Order, regulation, or program did the mitigation commitment come from?

Mitigation: What is the purpose and goal of each mitigation commitment?

Action Taken: What steps were taken during the past year?

Effectiveness: Was the mitigation effective?

Recommendation: Should the mitigation be continued, modified, or discontinued?

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Mitigation

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Analysis of Data To Evaluate Effectiveness

Analysis, not just the reporting of data, is essential for a MAP Annual Report to evaluate the effectiveness of mitigation activities and make recommendations. For example, knowing the significance threshold for each type of impact may be necessary. In some cases, a significant impact to a resource is a quantifiable threshold or objective standard based in regulation. For others, a subject matter expert's professional judgment is used to determine significance. In any case, the NEPA document should describe the impact threshold against which the mitigation's effectiveness can be measured.

Numerous mitigation actions have been completed at LANL. When a mitigation commitment has been fully implemented, it is added to a summary table in the MAP Annual Report with a justification for no longer tracking it as ongoing. When a mitigation commitment is integrated into an established LANL environmental management program, such as the Habitat Management Plan or the Air Monitoring Program, it, too, is no longer tracked in the MAP Annual Report, but is included in the summary table.

Revising the MAP

After restructuring the MAP Annual Report for FY 2013, LAFO revisited the MAP itself. This MAP was developed

in the 1990s and had been updated in 2008 after the first ROD for the Site-Wide EIS. The MAP was revised to incorporate mitigation commitments made in the second (2009) ROD for the 2008 Site-Wide EIS, and then for a 2010 EA and finding of no significant impact (FONSI) on the expansion of two LANL facilities. The MAP also covers commitments to Santa Clara Pueblo as part of ongoing government-to-government relations. The MAP describes the implementation and management steps for LAFO and LANL organizations. The process includes task scoping, funding allocation, tracking, technical implementation, annual reporting, and mitigation action commitment closure.

We revised the MAP to update the commitments and reflect the improved approach developed for the MAP Annual Report. For each program or project in its scope, the MAP now summarizes the objective, identifies the NEPA and other drivers, and lists the specific mitigation commitments. The final section lists mitigation commitments previously included in the MAP that have been completed or integrated into ongoing LANL programs. The [revised MAP](#) (just 15 pages) was issued in June 2014. Any mitigation commitments described in future RODs or FONSI will be incorporated into this MAP.

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Example: Mitigations Identified in the Cerro Grande Fire Special Environmental Analysis

NEPA Driver: DOE/National Nuclear Security Administration (NNSA) issued a [Special Environmental Analysis](#) in September 2000 to analyze the emergency fire suppression, soil erosion, and flood control actions taken by DOE/NNSA and LANL between May and November in response to the 2000 Cerro Grande Fire. (See [LLQR, June 2000](#), page 1, and [September 2000](#), page 1.) The Special Environmental Analysis also identified mitigations for these actions. While a majority of the mitigations have been completed, the MAP Annual Report for FY 2013 provides information on three ongoing commitments.

Mitigation Measures:

1. Monitor biota and sediment contamination behind the Los Alamos Canyon Weir and the Pajarito Canyon Flood Retention Structure.
2. Periodically remove sediment from the Los Alamos Canyon Weir based on sedimentation rate and contamination accumulation rate.
3. Complete rehabilitation of cultural resources impacted by the Cerro Grande Fire.

Actions Taken: The MAP Annual Report describes sampling of small mammals and vegetation for radionuclides, heavy metals, and polychlorinated biphenyls (PCBs); sediment removals from the canyon weir; and rehabilitation work on prehistoric archaeological sites, historic homestead-era sites, and historic buildings.

Effectiveness of the Mitigations: The MAP Annual Report finds that ongoing Mitigations Measures 1 and 2 are effective, and that Mitigation Measure 3 is effective and completed.

Recommendations: The MAP Annual Report recommends that biota sampling and sediment removal continue, and that LAFO close out Mitigation Measure 3 and manage any further monitoring and repair work under the existing LANL Cultural Resources Management Plan ([LLQR, December 2002](#), page 10).

LANL: A Unique Environmental Setting and History

Los Alamos National Laboratory (LANL) is located in north-central New Mexico. The 36-square-mile laboratory is sited on the Pajarito Plateau, a series of mesas separated by deep canyons cut by stream channels from the Jemez Mountains to the Rio Grande. With the exception of the towns of White Rock and Los Alamos, the surrounding land is undeveloped. Adjoining lands include the Santa Fe National Forest, Bandelier National Monument, and the Pueblo of San Ildefonso.

The Pajarito Plateau formed as the result of a pair of volcanic eruptions from the Valles Caldera that occurred 1.1 to 1.4 million years ago. The historical significance of the area dates back 10,000 years to the Paleoindians, who used the area as hunting grounds. The Plateau was home to ancestral Pueblo Indians from the 1150s through the 1600s, followed by the Spanish colonial period in the 1600s and 1700s. The late 1800s brought the railroad and the homesteading era. The Los Alamos Ranch School, built in the early 1900s, was responsible for educating more than 600 boys, but was closed abruptly in 1942 by the occupancy of the U.S. Army. Military personnel and a group of scientists moved to Los Alamos with the objective of developing the first nuclear weapon as Project Y of the Manhattan Project.

The geology, elevation, and climate contribute to a biologically diverse area including four major plant communities (juniper savanna, piñon-juniper woodland, ponderosa pine forest, and mixed conifer forest) and sensitive habitats, such as wetlands, floodplains, and riparian areas. Natural resource management, including habitat protection, is a major component of the Lab's environmental stewardship program. LANL monitors and protects large game (e.g., elk, deer, and bear) and special classes of species such as migratory birds, federally-listed threatened and endangered species (Mexican spotted owl and the Southwestern willow flycatcher) and state-listed species (Jemez Mountains salamander).

Seven primary watersheds drain from LANL directly into the Rio Grande, requiring a sophisticated program for monitoring surface water and sediment samples near and downstream from potential LANL-produced contaminant sources. Severe drought, three major wildfires in the past 30 years, and a 1000-year flood have dramatically affected the landscape, increasing the amount of ash and sediment transported by storm water as well as the loss of habitat, increased runoff, and visual impacts.

LANL has a large and diverse number of historic and prehistoric properties. More than 1,800 prehistoric and 145 historic sites have been recorded at LANL. Protecting the unique historic, cultural, and natural resources of the area is essential in planning and executing LANL's mission. Mitigation commitments range from removing contaminated sediments from canyons to providing for tribal visits to cultural sites. From simple to complex, there are close to 60 ongoing mitigation commitments.



An objective of several LANL mitigation measures is to decrease risks associated with recreational use of LANL lands, such as the Anniversary Trail, which offers views of the Rio Grande Valley and Sangre de Cristo Mountains. Mitigation commitments include determining appropriate closures and restrictions, and supporting the use of volunteers for trail maintenance projects. (Photo: Phillip Noll)

Mitigation

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For more information, contact me at karen.oden@nnsa.doe.gov or 505-667-0886. (The DOE NEPA Website maintains a [webpage](#) for MAPs and MAP Annual Reports. See also related article, page 17.) 

Editor's note: Karen Oden (see Transitions, page 18), an Environmental Engineer and Project Management Professional, has spent most of her 25-year career working for the Department of Defense and credits the

Five-Year Site Review process under the Comprehensive Environmental Response, Compensation, and Liability Act as the model for making the FY 2013 MAP Annual Report more effective and informative. She also acknowledges the contributions of Phillip Noll, Ph.D., an Environmental Scientist with the LANL Environmental Protection Division, who is responsible for overseeing the LANL mitigation program.

**LESSONS
LEARNED**

Bonneville Participates in Regional Infrastructure Team To Streamline NEPA Reviews and Project Decisionmaking

By David Kennedy, NEPA and Policy Planning Supervisor, Bonneville Power Administration

Bonneville Power Administration (BPA) participates in the Pacific Northwest Regional Infrastructure Team (PNWRIT), a regional partnership established in May 2013 to advance infrastructure projects that “spur job creation in communities, further energy independence for national security, manage climate change risk, and build and upgrade necessary infrastructure to support the

Nation’s economy, while ensuring environmental and natural resource stewardship.”

PNWRIT’s goals are to streamline permitting, environmental consultations, and regulatory compliance by coordinating issues for which multiple federal and state agencies have responsibilities – including reviews under

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Regional Partnership Formed

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the National Historic Preservation Act and Endangered Species Act (which typically must be completed prior to finishing a NEPA review). PNWRIT also serves as a forum for innovation in strategies and technologies that support integrated permitting.

PNWRIT focuses on renewable energy generation, electricity transmission, broadband, pipelines, ports and waterways, and water resource development projects. It was established in the spirit of Executive Order 13604, *Improving Performance of Federal Permitting and Review of Infrastructure Projects* (77 FR 18887; March 28, 2012).

Steering Committee and Strike Teams

PNWRIT's Steering Committee consists of the Region 1 Director of the U.S. Fish and Wildlife Service, the Oregon/Washington and Idaho State Directors of the Bureau of Land Management, and representatives of the Governors of Oregon, Washington, and Idaho. Additional PNWRIT participating agencies are the Bureau of Reclamation, USDA Forest Service, National Marine Fisheries Service, U.S. Army Corps of Engineers, and the Environmental Protection Agency, as well as BPA.

PNWRIT proposes to facilitate and troubleshoot priority projects through "Strike Teams" comprised of state and federal agency officials with decisionmaking authority for permits, reviews, and consultations. A Strike Team will develop joint permitting milestones, coordinate consultations, and address challenges to infrastructure development (text box, next page). A principal strategy for expedited permitting and consultation is expected to be the early identification of potential siting conflicts and mitigation measures.

As of late 2013, five BPA proposals (more than for any other agency) are PNWRIT priority projects:

- Two proposed new transmission lines that BPA is evaluating in EISs: I-5 Corridor Reinforcement Project, Oregon and Washington (DOE/EIS-0436) and Hooper Springs Transmission Project, Idaho (DOE/EIS-0451)
- The proposed rebuilding of three transmission line segments that BPA is evaluating in EAs: Alvey-



A linear infrastructure project, such as a transmission line, has the potential to affect many types of environmental, historic, and cultural resources.

Fairview Transmission Line Rebuild, Oregon (DOE/EA-1891), Lane-Wendson Transmission Line Rebuild, Oregon (DOE/EA-1952), and Hills Creek-Lookout Point Transmission Line Rebuild, Oregon (DOE/EA-1967)

Lydia Grimm, Manager for Environmental Planning and Analysis, is one of BPA's representatives participating in the PNWRIT effort. Although the Team focus is not primarily on NEPA compliance, the availability of the PNWRIT forum for discussing a major resource issue, for example, will help BPA in developing quality environmental analyses quickly and effectively.

Substantive Benefits Anticipated

BPA expects substantive benefits from PNWRIT's identification of cross-agency and cross-jurisdictional mitigation opportunities. PNWRIT has a stated priority of providing ecologically effective mitigation strategies for species or natural resources at a watershed- or ecosystem-level. Such strategies include [conservation banking](#) (offsite mitigation through permanently protected

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BPA expects the state and federal interagency coordination facilitated by PNWRIT to expedite NEPA analysis and compliance for these projects and create more holistic planning and mitigation. When agencies commit to permitting and review as a team, we are more likely to understand key issues early and be able to address them quickly. This will allow BPA to keep on its critical time schedules for infrastructure projects, and create better opportunities with our state and federal partners for meaningful and strategic mitigation of potential impacts.

– Lydia Grimm, BPA

Regional Partnership Formed

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lands that contain natural resource values), reinforcing a mitigation hierarchy (avoid, minimize, then mitigate), fulfilling species recovery plans, and integrating multiple agency efforts in conserving the same or similar resources.

As it gains experience, PNWRIT intends to develop a lessons learned program that will include regional workshops. For more information, please contact me at dkkennedy@bpa.gov or 503-230-3769. 

Challenges to Infrastructure Permitting

Through initial analysis and stakeholder outreach, PNWRIT has identified potential obstacles to expediting infrastructure planning and implementation ([Plan for Implementation](#), September 30, 2013, pages 10–11), and aims to address them through its Steering Committee and Strike Team activities.

- Contrasting agency requirements, expectations, and approaches for environmental or regulatory review and analysis.
- Competing demands for finite staff resources, loss of institutional knowledge, and limits on travel.
- Adhering to a project schedule for multi-year projects involving the public and multiple agencies with distinct missions, procedures, and processes; need for staff with expertise in project management and procurement.
- Uncertainty in decisionmaking authority within or among agencies; application of new policies to an ongoing project; differences of judgment in review and analysis.
- Synchronizing into an overall critical path those activities that some agencies conduct sequentially because of specific requirements, timeframes, and standards.
- Differences among agencies in data collection and survey methods, standards, and approaches to sharing and protecting sensitive or proprietary information.



Recovery Act NEPA Reviews Uphold Environmental Values and Economic Goals

Federal agencies “have shown they can uphold our country’s environmental values and deliver projects designed to stimulate our Nation’s economy,” said Nancy H. Sutley, Chair of the Council on Environmental Quality (CEQ), in releasing the ninth quarterly report to Congress on NEPA compliance for projects and activities (projects) funded under Division A of the American Recovery and Reinvestment Act of 2009 (Recovery Act).

CEQ announced that as of March 31, 2011, “more than 99 percent of environmental reviews for Recovery Act projects, or more than 190,000 of the 190,694 required NEPA reviews,” had been completed. In addition, CEQ noted that 12 of 24 Federal agencies had completed all NEPA reviews for projects funded by the Recovery Act.

We know that the health of our environment and the health of our economy are inextricably linked.

– Nancy Sutley, CEQ Chair

Cumulatively through March 31, 2011, Federal agencies completed more than 182,300 categorical exclusion determinations and more than 6,800 EAs, and analyzed 830 projects in EISs. Agencies concluded that NEPA is not applicable to more than 4,250 other Recovery Act projects. Together, these projects involve obligations of approximately \$292.6 billion funded under Division A of the Recovery Act. Federal departments and agencies completed more than 1,600 of these NEPA reviews during the quarter ending March 31, including more than 500 that were completed by DOE.

In addition, CEQ reported that approximately 690 NEPA reviews are underway: approximately 370 categorical exclusion determinations, 280 EAs, and 34 EISs. CEQ noted that roughly half of the pending NEPA reviews were added during the quarter ending March 31, 2011, largely due to the addition of approximately 2,000 new projects, many with NEPA reviews that have just begun. “One reason for the increase in new NEPA

reviews is that as projects are completed with cost savings, the saved funds may be returned to the agencies and can then be used for new projects or activities,” explained Ms. Sutley in her letter to Congress.

The pending NEPA reviews for DOE Recovery Act projects include 46 EAs and 21 EISs; DOE reported no pending categorical exclusion determinations. Of the 67 pending DOE NEPA reviews, 18 were included in the report for the first time. DOE NEPA reviews for 49 projects have been pending for more than 3 months (29 EAs and 20 EISs). Reasons DOE NEPA reviews are pending include a need to provide sufficient time to consider potential impacts to sensitive resources (e.g., cultural or historic properties), review information on an applicant’s change to a proposal, and respond to public comments. Also, for a number of pending NEPA reviews, DOE is a cooperating agency and must coordinate the NEPA review schedules with other Federal agencies. In one instance, DOE is coordinating its EIS schedule with a state energy commission’s review of the proposed project.

As of March 31, DOE had completed more than 9,200 NEPA reviews supporting the obligation of more than \$33.5 billion for projects receiving Recovery Act funding, an increase of almost \$100 million since December 31, 2010 ([LLQR, March 2011, page 11](#)). Of the completed reviews, more than 9,100 are categorical exclusion determinations, 106 are EAs, and 24 are EISs.

Future Reports

Section 1609(c) of the Recovery Act requires quarterly reports on NEPA activities related to implementing the Recovery Act through September 30, 2011. The next CEQ report to Congress will cover NEPA activities through June 30, 2011. Federal agency reports are due to CEQ in July 2011, and CEQ will submit the next report to Congress in August 2011.

The CEQ reports to Congress are available at [NEPA.gov](#). For more information, contact Brian Costner, Office of NEPA Policy and Compliance, at brian.costner@hq.doe.gov or 202-586-9924. 

Internal Planning and Effective Coordination Result in Successful Completion of EA

By: Amy Van Dercook, NEPA Document Manager, Golden Field Office

In a recent EA process, DOE’s Golden Field Office found that diligent planning and communication resulted in an exceptionally efficient outcome. DOE worked to complete the EA for the City of El Dorado Wind Energy Project (DOE/EA-1833; February 2011) in 5 months and on budget.

The proposed action was to authorize the expenditure of Federal funding appropriated under the American Recovery and Reinvestment Act (Recovery Act) to design, permit, and construct a 1.0-megawatt wind turbine to be located immediately west of the El Dorado Wetlands and Water Reclamation Facility in El Dorado, Kansas. The Kansas Corporation Commission was the grant recipient, with a sub-grant provided to the City of El Dorado for the construction of the wind turbine.

DOE published the Notice of Scoping in local newspapers and online at the Golden Field Office [Public Reading Room](#) and City of El Dorado websites, and sent copies to Federal, state, and local agencies; tribal governments; elected officials; businesses; and organizations and special interest groups.

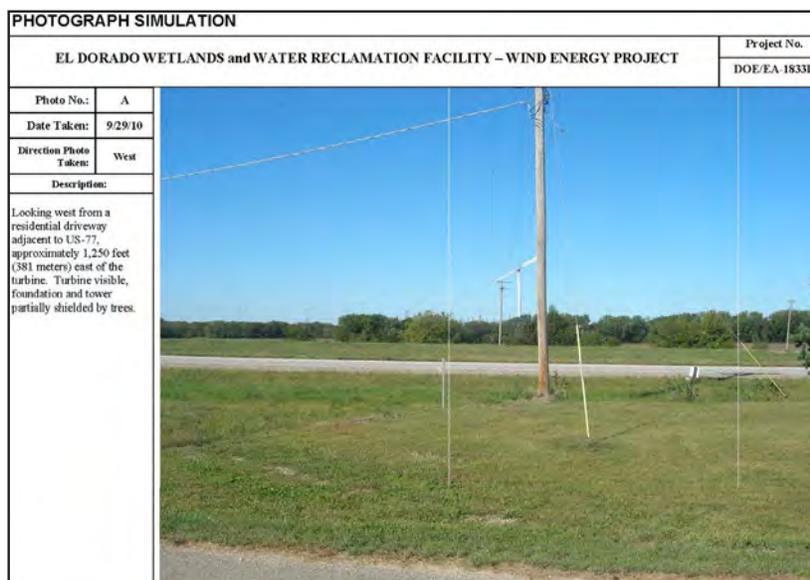
Agency Involvement and Coordination. One of the challenges in completing the EA was coordination among many involved parties: DOE, the Kansas Corporation Commission, City of El Dorado, a DOE contractor, a sub-recipient NEPA contractor, and the sub-recipient’s engineering firm. From the beginning of the project, we

all met weekly to discuss outstanding items. Action items were maintained in a project tracking spreadsheet and each deliverable had a set due date. This process helped all members of the team adhere to the schedule.

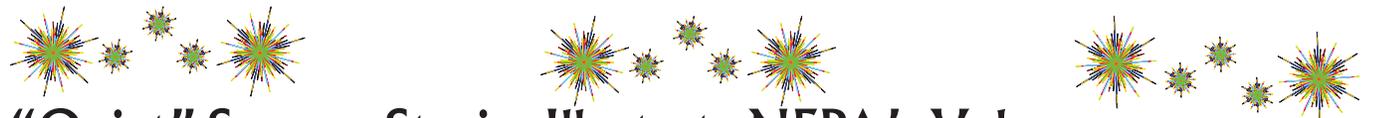
Floodplain Action. The El Dorado Wetlands and Water Reclamation Facility is located in the 100-year floodplain and the regulatory floodway of the Walnut River; therefore, DOE conducted a floodplain assessment pursuant to Executive Order 11988 and 10 CFR Part 1022. The proposed project would temporarily impact the floodplain/floodway during construction of the wind turbine foundation and installation of underground electrical connections to the facility. After completion of these activities, the affected floodplain areas would be graded, seeded, and restored to their previous condition. The proposed project required a No-Rise Certification from the City Assistant Engineer to ensure that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base (100-year) flood event. Discussions with the City’s Assistant Engineer during the development of the final EA indicated that, based on the information available for the proposed project, no adverse effects regarding floodplain issues or the issuance of a No-Rise Certification were anticipated.

Air Navigation Impacts. The Federal Aviation Administration (FAA) presumed hazard to air navigation in its initial aeronautical study. FAA indicated that a favorable determination could be made if the proposed structure height was reduced to 306 feet above ground level or if FAA performed additional studies for the original proposed tower height (330 feet). The City of El Dorado requested that FAA perform the additional study of the original tower height. FAA performed the requested study and subsequently issued a “Determination of No Hazard to Air Navigation” letter to the City of El Dorado. The FAA determination was subject to review if an interested party filed a petition, but no petitions were received and the determination became final on January 10, 2011.

For more information, contact Amy Van Dercook at amy.vandercook@go.doe.gov or 720-356-1666. 



The EA used photosimulation to represent the visual impacts of alternatives. This example shows a wind turbine (center background) as it would appear from a nearby residential driveway.



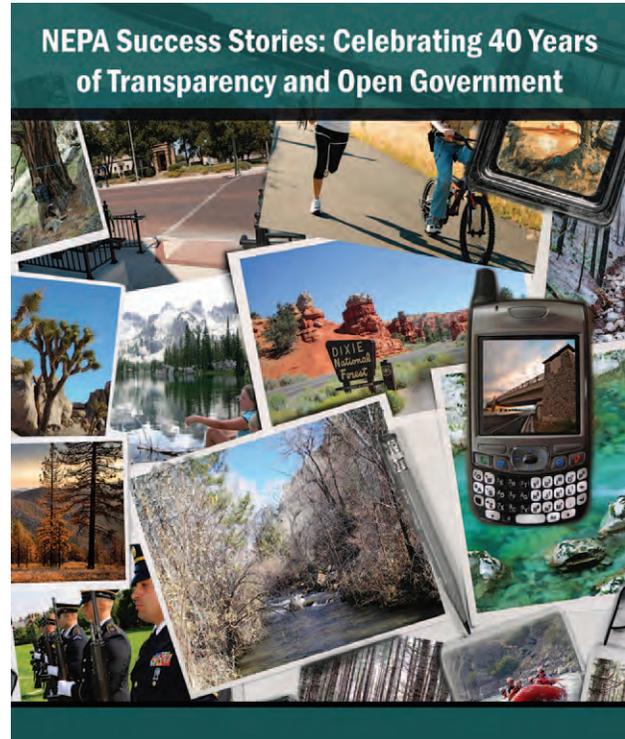
“Quiet” Success Stories Illustrate NEPA’s Value

“It is not often that one has the opportunity to review an experiment in governance with the perspective of 40 years of experience.” Thus begins the foreword, by Russell Train, first Chair of the Council on Environmental Quality, to a recent report entitled *NEPA Success Stories: Celebrating 40 Years of Transparency and Open Government*. The report, prepared by the Environmental Law Institute (ELI), the Grand Canyon Trust, and the Partnership Project, uses the occasion of NEPA’s 40th anniversary to examine the “revolutionary change in governmental decisionmaking” brought about by NEPA. It describes 13 examples, three of which are DOE’s, of how NEPA helps improve Government decisionmaking through public input and collaboration with other agencies.

Mr. Train noted that by requiring Government officials to listen to the public and seek comment before acting, “NEPA democratized decisionmaking.” These “quiet” NEPA success stories “fundamentally examine how public involvement and careful consideration of alternatives has produced better outcomes,” he wrote.

The report highlights four important benefits of the NEPA process:

- *NEPA recognizes that when the experts work together, public and Federal government collaboration results in better decisions.* Public input often provides perspectives not considered by Federal officials. The public may present alternatives, data, and environmental issues that a Federal agency would not have otherwise identified or studied.
- *Public input really matters.* Federal officials have an obligation under NEPA not simply to solicit or collect public input, but to consider it. Most importantly, this information can change the course of an agency’s decisionmaking; Federal agencies have selected alternatives that were identified by members of the public. In addition, members of the public have identified errors in the underlying data or analyses that have affected the decisions made.
- *NEPA requires agencies to explain themselves.* The NEPA regulations lay out the decisionmaking process that Federal agencies must follow. Federal officials have a duty to explain their decisions and respond to all substantive comments, either noting how they were resolved in the analysis or why no changes were warranted.
- *Courts play an important role.* The courts are available to members of the public to address their concerns with an agency’s NEPA process. The cases that are litigated are important, but the knowledge that litigation is an option helps ensure that Federal agencies complete a comprehensive, substantive review to avoid that path.



The NEPA process derives its power and usefulness from the way in which it provides other agencies, tribes, local governments, independent scientists, companies, and citizens an opportunity to actively participate in and contribute to these considerations.

— NEPA Success Stories

The following are brief summaries of the 13 case studies as presented in *NEPA Success Stories*.

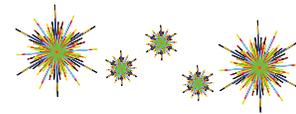
DOE NEPA Success Stories

Robust Consideration of Alternatives Protects Drinking Water

The case of the Moab Uranium Millsite shows how a thorough NEPA review of reasonable alternatives and their environmental consequences – including those identified by members of the public – leads to better decisionmaking. The site contained almost 16 million tons of uranium mill tailings piled within the floodplain of the Colorado River, which serves as a primary drinking water supply for millions of people. The case summary notes that after issuing a single-alternative EA in 1986, the U.S. Nuclear Regulatory Commission (NRC) issued a finding of no significant impact in 1993 on the mill owner’s plan to cap the tailings pile in place.

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NEPA Success Stories *(continued from previous page)*



The local county government protested this decision, wishing an alternate location to be considered, and Senator Orrin Hatch asked the NRC to prepare a full EIS on disposal options. The NRC believed that it could evaluate only alternatives proposed by its licensee, and so its EIS continued to examine only one action alternative. The EIS also did not address ground and surface water contamination because NRC determined there was no risk of contamination. Several Federal agencies challenged this assessment, presenting evidence of existing contamination. After the mill owner filed for bankruptcy, Congress assigned cleanup responsibility to DOE.

DOE held public scoping meetings and issued a draft EIS that explored the alternative of moving the tailings to a safer place. The Department received comments from diverse stakeholders, including bipartisan coalitions of Governors and Members of Congress; Federal, state, and local agencies; conservation groups; and members of the public. As a result of these comments, DOE gave greater consideration to the alternative of offsite disposal based on the risks of water contamination and to remediation alternatives, and the 2005 record of decision selected the preferred alternative from the final EIS, removing and relocating the tailings.

Interagency Comments Spur Mitigation Planning

DOE's experience preparing the site-wide EIS for Los Alamos National Laboratory (LANL) illustrates the valuable insight to be gained through interagency comments as part of the NEPA process. The draft EIS issued by DOE in 1998 did not identify wildfire as a plausible risk in its accident scenarios. Citing a then-recent U.S. Forest Service report about the threat of wildfire, commenters from the U.S. Department of the Interior and the Forest Service urged DOE to consider wildfire in its analysis. As a result, the final EIS included an extensive wildfire as an accident scenario. DOE committed to develop a wildfire mitigation plan by the end of 1999 and immediately implemented its recommendations to reduce potential fire impacts. Less than a year later, the Cerro Grande Fire broke out, burning 7,650 acres of the LANL site. DOE relied on the final EIS to respond to public concerns during the fire and to plan post-fire recovery. As noted by Eric Cohen of the DOE Office of NEPA Policy and Compliance in his summary of the case, "Without the interagency comments DOE received during the draft EIS



DOE responded to public and other agency concerns about the potential for the Moab tailings pile (center) to contaminate the Colorado River.

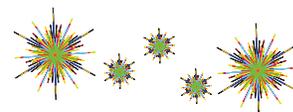
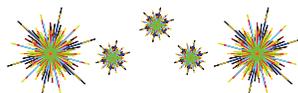
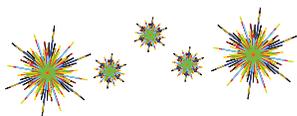
stage, DOE may have not had the foresight to consider and prepare for the possibility of a fire, resulting in more severe damage to LANL and the surrounding area."

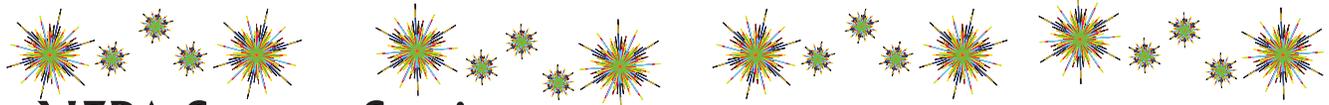
Considering Purpose and Need Results in Better Decisions

The emphasis in the NEPA process on identifying the purpose and need for agency action supports the development of appropriate alternatives, as illustrated by DOE's analysis of alternative technologies for tritium production. In 1989, DOE began preparing an EIS to evaluate alternative reactor technologies and locations to produce tritium to support the U.S. nuclear weapons stockpile. However, by 1992, the Cold War had ended and tritium requirements were expected to drop by as much as 75 percent. This provided a new opportunity to consider alternatives previously rejected because they would not have supplied sufficient tritium for Cold War planning levels, wrote Brian Costner, DOE NEPA Office, in the case summary.

Admiral James Watkins, then Secretary of Energy, explained at the time that the analyses performed for the tritium production reactor EIS helped him avoid making a bad decision. "[T]hank God for NEPA," said Secretary Watkins, "because there were so many pressures to make a selection for a technology that might have been forced upon us and that would have been wrong for the country."

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NEPA Success Stories *(continued from previous page)*

Other Agency NEPA Success Stories

Expansion of an Army National Guard Readiness Center – Army National Guard Bureau

Issue: Provide new office space and parking for 1,200 relocated staff while addressing traffic concerns

NEPA Process: In response to an EA for new office and parking facilities, cooperating agencies, local government, community leaders, and the public identified significant concerns with regard to traffic congestion and transportation management. The Army National Guard Bureau held public meetings to better understand the concerns. Public comment helped the Army understand potential adverse effects and develop solutions to mitigate them.

NEPA Lesson: The successful implementation of mitigation measures can further NEPA's goal of protecting the environment and can also improve the overall project.

A Highway, a Wetland, and a Divided Community – Federal Highway Administration

Issue: Reconcile the need to build a highway in wetlands with the desire to expand and protect those wetlands

NEPA Process: In both the draft EIS and supplemental draft EIS for a highway project, all action alternatives crossed through wetlands. The subsequent permitting process determined that information was needed on alternatives that did not cross wetlands. Pro-highway and pro-wetland groups formed a professionally facilitated collaborative to consider alternatives and encourage development of an integrated land use and transportation solution that would be broadly supported by stakeholders. The Federal Highway Administration selected a “no-build” option, meaning that the highway would not be built through wetlands.

NEPA Lesson: NEPA's requirement to consider alternatives can serve as the key to breaking a stalemate among stakeholders.

Preserving a Historic Brick Highway – Texas Department of Transportation

Issue: Provide for roadway safety and preserve a historic highway

NEPA Process: The Texas Department of Transportation was concerned that a brick roadway had deteriorated and become unsafe, while local residents wanted to retain the historic highway. The Department took care to involve locals in the scoping process, resulting in a productive discussion of alternatives. The public continued to be involved after the selection of the preferred alternative all the way through construction.

NEPA Lesson: The NEPA process can bridge distance between government and the local community, resulting in greater trust.

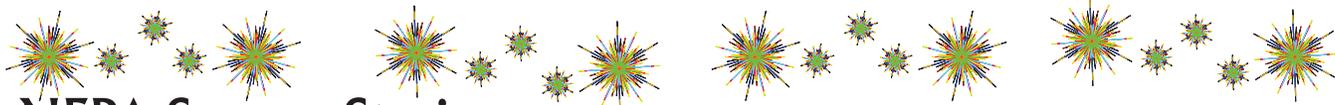
Joshua Tree National Park – Department of the Navy

Issue: Allow training flights while avoiding disturbance to national park visitors and staff

NEPA Process: An EIS for basing a new type of aircraft at a naval air station gave the National Park Service opportunity to comment on low flights over a national park. However, the Navy's record of decision did not address these concerns. Staff from the National Park Service and the Navy prepared an EA to analyze locations for flight paths and developed a solution allowing for low flights in less sensitive areas of the park.

NEPA Lesson: The NEPA process can provide an avenue for developing consensus.

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NEPA Success Stories *(continued from previous page)*

Siskiyou National Forest Watershed Protection Project – Forest Service

Issue: Reduce wildfire risks while protecting water quality

NEPA Process: The Forest Service planned to improve protection from wildfire by removing large trees in a national forest and selling the timber. Community members objected, citing water quality concerns, and formed a diverse group to oppose the project. The group participated in the EIS public comment process and developed an alternative proposal to thin only smaller trees and leave the large fire-resistant trees.

NEPA Lesson: The NEPA process provides an opportunity for the public to propose improvements to an agency proposal.

Rethinking Routes and Roads on a National Forest – Forest Service

Issue: Balance environmental protection with recreational uses of a national forest

NEPA Process: The Forest Service is required to establish what routes are open to different types of vehicles for each of its national forests. The debate can be intense between competing desires for environmental protection and economic development related to the recreational use of vehicles in the forest. The Service facilitated public input to the EIS by providing detailed data about the existing routes, their current uses, and related environmental concerns. The scoping period was extended by a year to allow the Service to hold in-depth discussions with commentors who had proposed individual routes. Although the Service ultimately decided to close a significant number of existing routes, its decision was broadly accepted.

NEPA Lesson: A flexible NEPA process gives the public an opportunity to be a part of, and more readily accept, the final decision.

Hells Canyon Comprehensive Management Plan – Forest Service

Issue: Revision of a comprehensive land use management plan

NEPA Process: The Forest Service intended to revise a land use management plan. Before the end of the scoping process, a group comprising tribal, state, and local government representatives; environmental organizations; and outside consultants developed an alternative proposal for consideration. The first draft EIS did not include this alternative, but the Service later added it to the second draft EIS. The Service convened a multi-stakeholder subcommittee of an existing advisory committee that provided input, and the final EIS included many features of the outside alternative.

NEPA Lesson: The NEPA process provides an opportunity to take a fresh look at current practices when revisions are being considered.

The Point Project, Klamath National Forest – Forest Service

Issue: Public opposition to a logging plan restarts NEPA process

NEPA Process: A court ruling halted a Forest Service plan to log and sell old-growth trees and replace them with young fiber plantations, a common practice in the past but one with potentially great environmental impacts. The Service developed a new plan to thin small-diameter trees and to use controlled burning to reduce wildfire risk. During the NEPA process for the new plan, the Service worked more closely with concerned local groups to address their concerns. The resulting plan both preserved natural forest processes and protected the community from wildfire.

NEPA Lesson: The NEPA process facilitates the identification of innovative solutions that are sensitive to site and community needs.

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Changing a Highway to a Parkway, and a Road to a Multi-Modal Transportation System – Federal Highway Administration and Army Corps of Engineers

Issue: Highway project subject to numerous lawsuits

NEPA Process: A draft EIS was issued to address the issuance of permits for a portion of a state-proposed highway. Several citizen groups and state and Federal agencies, including the Environmental Protection Agency and the Fish and Wildlife Service, criticized the draft EIS on multiple grounds. Although the final EIS made changes to address these concerns, a coalition of environmental and transportation advocacy groups filed suit and won. As a result, the parties worked together to combine the best aspects of the state's proposal and the public's ideas while still fulfilling the state's intended purpose.

NEPA Lesson: Although agencies should strive to avoid litigation under NEPA, it can result in an improved outcome by allowing the parties to better appreciate the merits of each other's positions.

West Alsea Landscape Management Project – Forest Service

Issue: Planning a habitat restoration project

NEPA Process: Nearly a year before the formal beginning of the scoping process, the Forest Service began reaching out to a local organization whose work was concentrated on the watershed area encompassed within the project. The Service held field tours and meetings both to provide information to and solicit input from the group and others. The Service incorporated these suggestions and concerns into the proposed action before scoping and before the draft EA was published for comment. This early involvement of the public led the Service to consider alternatives to the proposed action and improvements to the design criteria that it might not have considered otherwise and resulted in a final EA that enjoyed broad public support.

NEPA Lesson: Interactions between agencies and stakeholders before beginning the NEPA process can improve the success and efficiency of the subsequent process.

Download the Report



The [report](#) is available as a free download at the ELI website at www.eli.org. (The story of NEPA review for the Cerro Grande Fire at the LANL site is told on page 1 of the [June](#) and [September 2000](#) issues of *LLQR*; the Moab EIS is covered in [June 2005](#) on page 8 and in [September 2005](#) on page 10; the tritium decision, in 1992, predates *LLQR*.) 

Third Idaho High-Level Waste ROD Issued; Phased Decision Strategy Completed

With the issuance of an amended Record of Decision (ROD) in December 2009, DOE completed a three-phase decision strategy for high-level radioactive waste and associated facilities at the Idaho National Laboratory (INL), and met a major milestone of a 1995 agreement resolving litigation with the State of Idaho (Idaho Settlement Agreement). “This achievement shows that an EIS can have a long shelf life, providing the flexibility to effectively support agency decisions when they are ripe,” said Eric Cohen, Office of NEPA Policy and Compliance.

In the amended ROD, DOE announced the selection of hot isostatic pressing as the technology to treat the 4,400 cubic meters of high-level radioactive waste calcine at INL’s Idaho Nuclear Technology and Engineering Center (INTEC). Calcine is a dry granular powder waste form that is stored at INTEC in six stainless steel bin sets. The bin sets were designed to be secure for at least 500 years.

Hot Isostatic Pressing Selected

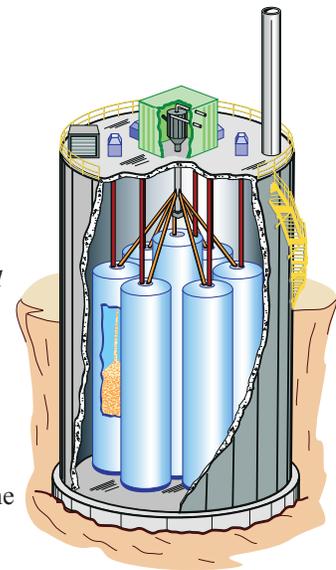
The ROD states that DOE selected hot isostatic pressing because this technology is anticipated to treat the calcine cost-effectively and produce a volume-reduced monolithic waste form suitable for transport outside of Idaho, with completion of treatment by a target date of December 31, 2035, in accordance with the Idaho Settlement Agreement. (The Settlement Agreement required that a ROD be issued no later than December 31, 2009, establishing a plan and date for completion of the treatment of all calcine waste located at INL.)

The ROD also states that DOE considered the Administration’s intent to terminate funding for the Yucca Mountain program while evaluating nuclear waste disposal alternatives, and indicates that the ultimate disposition of the calcine may be affected by the recommendations of a Blue Ribbon Commission charged with evaluating alternatives for managing and ultimately disposing of spent nuclear fuel and high-level waste.¹ In view of uncertainty regarding waste disposal, the decision provides flexibility by incorporating an option intended to ensure that wastes will be ready to leave Idaho by 2035 and that includes potential use of treatment additives to produce a glass-ceramic waste form. The ROD notes that the hot isostatic treatment process also provides the technical capability to further treat liquid sodium-bearing waste, which will be treated using a different technology, steam reforming, as announced in the first ROD.

One EIS Supports Multiple Decisions

DOE issued the *Idaho High-Level Waste and Facilities Disposition Final Environmental Impact Statement* in October 2002 (DOE/EIS-0287), with the State of Idaho as a cooperating agency. DOE consulted with the State on all of the decisions under the EIS, and the RODs reflect the State’s concurrence and comments on the decisions. The EIS analyzed two sets of alternatives: (1) processing alternatives for liquid sodium-bearing waste and other liquid waste stored in below grade tanks, and for the high-level waste calcine stored in the bin sets at INTEC (for each waste processing alternative the EIS analyzed multiple implementing options and treatment technologies); and (2) facility disposition alternatives for the high-level waste management facilities.

Subsequently, several studies and reviews were conducted before DOE issued RODs under the EIS. In June 2005, DOE issued its *Supplement Analysis for the Idaho High-Level Waste and Facilities Disposition Final Environmental Impact Statement* (DOE/EIS-0287-SA-01). The supplement analysis (SA) reviewed proposed waste treatment technologies and updated site characterization data and risk calculations. Based on the SA, DOE determined that the EIS analyses did not require supplementation. On August 3, 2005 (70 FR 44598), DOE issued a notice of preferred treatment technology for sodium-bearing waste, reflecting DOE’s evaluation of treatment technology studies conducted after the 2002 EIS was issued. The notice remedied a concern expressed by some members of the public that the preferred alternative identified in the EIS regarding sodium-bearing waste treatment technology was too broad to adequately inform the public of DOE’s plans. On August 11, 2005, after examining this issue, DOE’s Inspector General concluded that the Idaho EIS process complied with NEPA (*LLQR*, September 2005, page 12).



Bin sets are a series of reinforced concrete vaults containing 3 to 12 stainless steel storage bins. A typical bin set is represented here.

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¹ On January 29, 2010, the President requested that the Secretary of Energy establish a Blue Ribbon Commission on America’s Nuclear Future (Commission) and appoint its members. In a press release on January 29, 2010, DOE announced the formation of the Commission, charged with conducting a comprehensive review of the back end of the nuclear fuel cycle and making recommendations on alternatives for storing, processing, and disposal of civilian and defense spent nuclear fuel and nuclear waste. As requested by the President, the Commission’s interim report is due within 18 months and a final report within 24 months.

Idaho ROD (continued from previous page)

In the first ROD (70 FR 75165; December 19, 2005), DOE decided to treat the liquid sodium-bearing waste using a technology known as steam reforming to allow disposal at the Waste Isolation Pilot Plant in New Mexico or a geologic repository for spent nuclear fuel and high-level waste. DOE also decided to conduct performance-based closure of existing facilities directly related to the high-level waste program at INTEC, excluding the tank farm facilities and bin sets, once their missions are complete. Further, DOE announced a phased decision strategy, with future RODs planned in 2006 and 2009.

In the second ROD (71 FR 68811; November 28, 2006), DOE decided to conduct performance-based closure of the tank farm facilities. This decision followed the Secretary's Determination, in consultation with the Nuclear Regulatory Commission, that residual waste at the tank farm facilities would not be high-level waste because the residuals would meet the criteria in Section 3116(a) of the National Defense Authorization Act for Fiscal Year 2004. 

A Note on ROD Effective Dates

A DOE ROD must be published in the *Federal Register*, but DOE may implement the decision before *Federal Register* publication if the ROD has been signed and the decision and the availability of the ROD have been made public by other means (e.g., press release, announcement in local media). (10 CFR 1021.315(d)) This enables a ROD to be effective (or issued) and action taken before *Federal Register* publication, which may take three or more days from the date of signature.

In the case of the third Idaho ROD, the Assistant Secretary for Environmental Management signed the ROD on December 23, 2009, but, because of the holidays, the ROD was not immediately submitted to the *Federal Register*. To ensure that the ROD was issued by December 31, 2009, per the Settlement Agreement, DOE made the signed ROD publicly available by posting it on the INL website and the DOE NEPA Website on December 27. The ROD was docketed for publication in the *Federal Register* on December 31 (at which time it was available for public inspection), and published in the *Federal Register* on January 4, 2010 (75 FR 137). [A correction affecting only the heading of the ROD as published on January 4 was published on January 12, 2010 (75 FR 1615).]



More Than 73,000 Recovery Act NEPA Reviews Complete; CEQ Reports No Major Delays

The Council on Environmental Quality (CEQ) reported to Congress on August 3, 2009, on the NEPA status of more than 79,000 projects and activities receiving funding through the American Recovery and Reinvestment Act (Recovery Act). As of June 30, 2009, Federal departments and agencies had completed more than 70,000 categorical exclusion determinations, 1,600 environmental assessments (EAs), and 840 EISs related to Recovery Act projects and activities and had determined that NEPA is not applicable to almost 2,000 other projects and activities. Still pending for these 79,000 projects were almost 6,800 expected categorical exclusion determinations, 3,500 EAs, and 100 EISs.

The CEQ report includes 156 DOE Recovery Act projects – three times the number included in the first report, which CEQ submitted to Congress on May 18. As of June 30, DOE had completed more than 170 NEPA reviews for all or part of 68 projects and determined that NEPA reviews are not required for another eight projects. This effort supported the obligation of more than \$6.6 billion of Recovery Act funding in areas such as weatherization, environmental cleanup, and science.

Agencies Addressing NEPA Quickly

CEQ wrote that, “As the [May and August] reports show, many agencies have ‘shovel ready’ projects which have completed environmental analyses and are fully permitted, approved, and ready for implementation. For any projects and activities for which necessary environmental analyses and permits or approvals have not been completed, agencies are expeditiously addressing their compliance requirements.”

The August report describes NEPA compliance for projects expected to receive more than \$97 billion in funding. More than \$45 billion of this total was obligated by the Department of Education for formula grants to states, for which NEPA review is not required. “Overall, the progress that departments and agencies have reported indicates that NEPA analyses are informing decisions for expenditure of [Recovery Act] funds in an environmentally sound manner,” CEQ noted.

CEQ also highlighted steps by agencies to implement NEPA efficiently. “Several agencies are using programmatic NEPA reviews to address similar projects and activities, to facilitate implementation of individual projects and activities either by providing full NEPA compliance or programmatically addressing common environmental issues, thereby eliminating the need to replicate the review of those issues,” CEQ wrote.

DOE Making Progress, Much Work Ahead

The tripling in the number of DOE Recovery Act projects between the May and August reports reflects progress by DOE Program Offices in completing the approval process for the allotment of funding. The status of NEPA compliance varies among these projects. Most Office of Environmental Management Recovery Act projects rely on pre-existing NEPA reviews and so are reported as complete in the CEQ report. The Office of Science had completed NEPA reviews for almost half of its projects by June 30, primarily by reviewing existing NEPA documents and applying categorical exclusions.

The bulk of NEPA reviews pending as of June 30 are related to applications received in response to funding opportunity announcements issued by DOE. Thousands of applications were received in late June and additional applications are expected through the summer. The Office of Energy Efficiency and Renewable Energy is responsible for most of these, including applications for the State Energy Program and Energy Efficiency and Conservation Block Grant Program (related article, page 1). Funding opportunities also have been initiated by the Advanced Research Projects Agency–Energy, Office of Fossil Energy, Office of Electricity Delivery and Energy Reliability, and the Loan Guarantee Program Office. The Western Area Power Administration and Bonneville Power Administration also are expected to identify projects that will require NEPA review.

Future Reports To Explain Pending Actions

The next CEQ report to Congress will cover NEPA activities through September 30, 2009. DOE and other Federal agencies are required to submit their agency reports to CEQ by October 15, and CEQ will submit its report to Congress on November 2.

The report will continue the cumulative update of the status of NEPA actions to implement the Recovery Act. In addition, CEQ has asked agencies to explain the status of pending NEPA actions. At a meeting of Federal agency NEPA contacts on August 25, Horst Greczmiel, CEQ Associate Director for NEPA Oversight, noted that NEPA actions that remain pending on multiple reports will be scrutinized.

Section 1609(c)* of the Recovery Act requires quarterly reports on NEPA activities related to implementing the Recovery Act through September 30, 2011. The CEQ reports to Congress are available at www.nepa.gov. For more information, contact Brian Costner, DOE Office of NEPA Policy and Compliance, at brian.costner@hq.doe.gov or 202-586-9924.

Western Corridors Programmatic EIS Completed, A New Era for Energy Transport Projects

The Final Programmatic EIS (PEIS) for the *Designation of Energy Corridors on Federal Lands in 11 Western States* (DOE/EIS-0386) (West-Wide Energy Corridors PEIS) was issued on November 28, 2008 (73 FR 72477). DOE and the Bureau of Land Management (BLM), Department of the Interior, were co-lead agencies together with 13 cooperating and consulting agencies.

Section 368 of the Energy Policy Act of 2005 directed the Secretaries of Agriculture, Commerce, Defense, Energy, and the Interior to take a series of steps to designate energy transport corridors on Federal lands. The agencies were also required to perform environmental reviews and incorporate the designated corridors into the relevant agency land use, resources management, or equivalent plans (*LLQR, December 2007*, page 12).

The Final PEIS analyzes a No Action Alternative and the Proposed Action Alternative, which is also the preferred alternative, under which the agencies would designate and incorporate Federal energy corridors through amendment of relevant land use plans.

Public Comments Alter Routes, Operating Procedures

Approximately 14,000 individuals and organizations submitted over 3,500 substantive comments on the Draft PEIS during a 97-day public comment period that ended on February 14, 2008. Public hearings were conducted in all 11 western states (Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming), the Navajo Reservation, and Washington, DC. Comments, including those resulting from a form-letter campaign, were received from across the United States and from several other countries.

The agencies reviewed and considered all comments received on the Draft PEIS. “We used a database to categorize comment topics, weighed the public’s concerns, made adjustments to the PEIS as called for, and then developed a ‘library’ of responses to create the comment response summary in Volume 4 of the Final PEIS,” explained LaVerne Kyriss, DOE NEPA Document Manager for the PEIS. Among the concerns expressed,

some questioned proposed corridor routing near sensitive environmental areas, and others advocated required, rather than voluntary, interagency operating procedures that would be used to minimize or avoid project specific environmental impacts. As a result of the public comments, some corridor routes were altered to avoid sensitive environmental resources and proposed mandatory resource-specific interagency operating procedures were added to the Final PEIS.

Next Steps

“As applicants propose the construction or operation of new, and potentially cross-jurisdictional, energy transport facilities, BLM and affected agencies will take advantage of a streamlined process to review applications and address environmental and regulatory concerns,” explained Ray Brady, BLM Energy Team Leader. “In the past, project delays have often been the outcome of multiple agency offices issuing environmental reviews, project requirements, and land use authorizations.”

“The designation of energy corridors across all Federal lands, not just the National Forest System lands, provides land managers, the public, and industry a clear road map of where energy transportation facilities can be located,” said Greg Smith, Director of Lands, U.S. Forest Service. “This road map of connected corridor locations would help minimize impacts of multiple uses of our National Forests. This project would improve the procedures for authorizing use of National Forest lands while addressing America’s needs for energy supplies and protect our natural resources,” he said.

Records of decision (RODs) can be issued no sooner than December 29, 2008, 30 days after issuance of the Final PEIS and, for BLM, after the 60-day Governors’ review required by BLM regulations. Although DOE is a co-lead agency, DOE will not issue a ROD, as the Department will not amend any land use, resource management, or equivalent plans.

For additional information, contact LaVerne Kyriss at kyriss@wapa.gov or 720-962-7170, or visit the PEIS website at www.corridoreis.anl.gov. 

LESSONS LEARNED

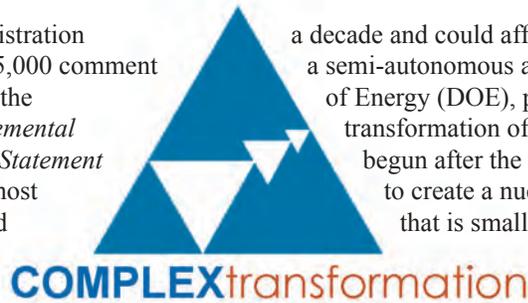
March 3, 2008; Issue No. 54

First Quarter FY 2008

Programmatic EIS on Nuclear Weapons Complex Draws National Interest, Many Comments

The National Nuclear Security Administration (NNSA) has already received about 35,000 comment documents, most via email, regarding the *Draft Complex Transformation Supplemental Programmatic Environmental Impact Statement* (SPEIS; DOE/EIS-0236-S4). With almost half the 90-day public comment period remaining, “We expect comments from thousands more people,” said Ted Wyka, Complex Transformation SPEIS Document Manager. NNSA published a notice of availability for the Draft SPEIS on January 11, 2008 (73 FR 2023), and the public comment period continues through April 10, 2008.

The SPEIS represents the first nationwide review of alternatives for the nuclear weapons complex in more than



a decade and could affect facilities in six states. NNSA, a semi-autonomous agency within the Department of Energy (DOE), proposes to continue the transformation of the nuclear weapons complex begun after the end of the Cold War in order to create a nuclear weapons infrastructure that is smaller, safer, more secure, and less expensive to operate.

“I feel a sense of urgency,” said Thomas P. D’Agostino, NNSA Administrator, in releasing the Draft SPEIS. “We must act now to adapt for the future security needs of the country, and stop pouring money into an old, Cold War-era nuclear weapons complex that is too big, too expensive, and doesn’t offer updated and safer ways of maintaining our nuclear stockpile.”

(continued on page 3)



*Dinah Bear, General Counsel
Council on Environmental Quality*

Two of NEPA’s Best Retire
See pages 16 and 17 for more . . .

*Anne Norton Miller, Director
Office of Federal Activities
Environmental Protection Agency*



Complex Transformation (continued from page 1)

SPEIS Evaluates Programmatic and Project-Specific Alternatives

The Draft Complex Transformation SPEIS analyzes both programmatic and project-specific alternatives. (See *LLQR*, December 2006, page 1, and March 2007, page 3.) The programmatic alternatives involve restructuring major manufacturing and research and development (R&D) facilities that use plutonium and highly enriched uranium to produce nuclear components for the weapons stockpile. These alternatives include combinations of new and existing facilities at Los Alamos National Laboratory (LANL) in New Mexico, the Nevada Test Site in Nevada, the Pantex Plant in Texas, the Savannah River Site in South Carolina, and the Y-12 National Security Complex in Tennessee. The programmatic alternatives also include consolidating storage of significant quantities of plutonium and highly enriched uranium. Implementation of programmatic decisions related to these alternatives could require future site-specific NEPA review.

The most substantial change from the SPEIS as described in the notice of intent (71 FR 61731; October 19, 2006) is the addition of a “Consolidated Centers of Excellence” programmatic alternative, which includes options to locate all major manufacturing functions at either one or two of the five sites. Another major change is the addition of a qualitative discussion of a smaller nuclear weapons stockpile and lower manufacturing capability. In addition, NNSA added an alternative to produce up to 80 plutonium “pits” per year at LANL, which currently is part of NNSA’s preferred alternative. A pit is the core of a nuclear weapon.

Project-specific alternatives in the Draft Complex Transformation SPEIS include the consolidation of R&D and testing facilities for tritium R&D, high explosives R&D, hydrodynamic testing, major environmental testing, flight test operations, and other weapons support functions. These alternatives could affect operations at the five sites evaluated for programmatic alternatives (identified above) and at Lawrence Livermore National Laboratory in California, Sandia National Laboratories in New Mexico and California, the Tonopah Test Range in Nevada, and the Department of Defense’s White Sands Missile Range in New Mexico. NNSA expects that implementation of decisions related to the project-specific alternatives likely would not require additional NEPA reviews.

Web Enhances Information Access

The web is an important part of NNSA’s strategy for facilitating public involvement in the Draft SPEIS.



The Draft Complex Transformation Supplemental Programmatic EIS consists of three volumes totaling about 1,800 pages.

Upon approval of the Draft in December 2007, NNSA announced its plans for public participation and made the Summary of the Draft Complex Transformation SPEIS, as well as several fact sheets, available on its website (www.nnsa.doe.gov/complextransformation.htm). Also, NNSA has since posted the complete Draft SPEIS (except for a classified appendix), most reference documents, and materials prepared for the public hearings on a separate website (www.ComplexTransformationSPEIS.com). Security concerns prevented some reference documents from being made available on the web. Those have been placed in reading rooms around the country, along with a CD of those reference documents available on the web, or are available upon request.

Public Comments by Email and at Hearings

The web also is being used by organizations outside NNSA to encourage public participation in the Draft SPEIS. National and local organizations have generated thousands of email messages from individuals across the country. “We started receiving public comments by email during the first week of the comment period,” said Mr. Wyka. Comments received to date via email primarily express opposition to nuclear weapons.

During February, NNSA held public hearings in South Carolina, Tennessee, and Texas. Total participation ranged from less than 20 people to almost 400, and the number of people providing comments from a dozen to approximately 80. “We begin each hearing with an open house session. Subject matter experts are available near poster displays to answer questions,” said Mr. Wyka. “This allows for productive interaction with the public, thanks to the great support from the local site offices and contractors.”

(continued on page 11)

Complex Transformation *(continued from page 3)*

“We follow the open house with a formal presentation on the draft SPEIS and then provide an opportunity for everyone to offer oral comments on the record.” Many commentors have stated their opposition to nuclear weapons production, while others have supported NNSA’s proposals. Public hearings continue through March in Nevada, New Mexico, California, and Washington, DC.

NNSA anticipated a large number of comment documents, after having received more than 33,000 during the scoping period last year. Mr. Wyka explained that he prepared by working with computer support staff to ensure that a large volume of email could be received efficiently and

by establishing a team early to review public comments. The team includes a core group to coordinate and integrate the review, as well as headquarters and site staff with expertise in technical and policy questions. “We systematically log receipt of each comment document and have begun sorting them for review,” said Mr. Wyka. “We will consider each comment individually and collectively and take the appropriate action, such as improving the analyses or making factual corrections.”

For additional information, contact Ted Wyka at theodore.wyka@nnsa.doe.gov or 202-586-3519. 

LESSONS LEARNED

March 1, 2007; Issue No. 50

First Quarter FY 2007

Flexibility of NEPA Process Facilitates Decisions for Strategic Petroleum Reserve Expansion

By: Yardena Mansoor and Carolyn Osborne,
Office of NEPA Policy and Compliance

The Department of Energy (DOE) accommodated new information and changed circumstances throughout preparation of its environmental impact statement (EIS) for expansion of the Strategic Petroleum Reserve. This allowed Secretary of Energy Samuel W. Bodman recently to select a new site for development – at Richton, Mississippi – and two existing sites for expansion – at Bayou Choctaw, Louisiana, and Big Hill, Texas.

As unforeseen situations presented themselves, DOE adapted its process and analysis. A new site was proposed at the end of a scoping period already protracted by the hurricanes of 2005. In the course of EIS preparation, geotechnical studies indicated that one of the candidate new sites was unreasonable, one expansion site was slated for commercial use, and new combinations for expansion of existing sites were identified to better serve the Reserve's mission. Also, DOE made design changes related to the Richton site to protect endangered species and critical habitat. *(continued on page 4)*



Secretary Bodman (right) signs the Record of Decision designating Richton as the new site for the expansion of the Strategic Petroleum Reserve. Signing as witnesses are Mississippi Governor Haley Barbour (center) and Richton Mayor Jimmy White.

Petroleum Reserve Expansion EIS (continued from page 1)

The EIS process allowed us to adapt efficiently and effectively to changes affecting the alternatives, and it facilitated our decisionmaking.

– David Johnson, Director, Planning and Engineering Strategic Petroleum Reserve, Office of Fossil Energy

Energy Policy Act of 2005 Directed Strategic Petroleum Reserve Expansion

The Strategic Petroleum Reserve, a national stockpile of crude oil, was established following the 1973–74 oil embargo to protect the United States from interruption in petroleum supplies that would be detrimental to our energy security, national security, and economy. The current storage capacity is 727 million barrels in underground caverns in rock salt formations at Bayou Choctaw and West Hackberry, Louisiana, and Big Hill and Bryan Mound, Texas.

The Energy Policy Act of 2005 directed DOE to select sites necessary to enable acquisition of the full authorized volume of the Reserve (1 billion barrels). DOE was to select from among sites previously studied, with preference given to the five sites assessed in a 1992 draft EIS, and from other sites proposed by a state where a site has been previously studied by DOE. (In his State of the Union Address on January 23, 2007, the President proposed an expansion of the Reserve to 1.5 billion barrels. Any DOE proposal in this regard is independent of the current expansion to 1 billion barrels and would be subject to a separate NEPA review process.)

In developing the range of reasonable alternatives for the EIS, DOE first considered expanding existing storage sites to capitalize on existing infrastructure and then considered new sites to add 273 million barrels of storage capacity to reach the 1-billion barrel goal.

Storage capacity at new and expansion sites would be created in underground salt domes through solution mining (that is, using water to dissolve the salt) and disposing of the resulting brine by ocean discharge or underground injection. New pipelines, marine terminal facilities, and other infrastructure would be required. Proposed construction and operation activities include clearing and preparing sites; constructing pipelines and facilities for raw water intake, brine disposal, and crude oil distribution; constructing transmission lines to provide electrical power to the sites; and constructing or augmenting support buildings and other facilities.

EIS Process Accommodates Hurricane and Additional Alternative Site

In its Notice of Intent to prepare the EIS, DOE proposed to expand storage capacity at existing sites at Bayou Choctaw, Big Hill, and West Hackberry (up to an additional 30, 108, and 15 million barrels, respectively) and to develop one new storage site with a capacity up to 160 million barrels at either Clovelly or Chacahoula, Louisiana; Stratton Ridge, Texas; or Richton. Following the scoping period that was to extend from September 1 to mid-October 2005, DOE planned to issue the draft EIS in early Spring 2006 and complete the EIS process in August 2006 as directed by the Energy Policy Act.

Due to the regional impacts of Hurricane Katrina, DOE extended the scoping period and rescheduled scoping meetings. Near the end of the revised scoping period, the Governor of Mississippi proposed the Bruinsburg site for DOE's consideration, and DOE reopened the scoping period with an additional scoping meeting. DOE adjusted its planned EIS schedule to consider the new site.

Candidate Site Shown Unreasonable Between Draft and Final EIS

After issuing the draft EIS, DOE completed additional geotechnical studies of the suitability of the salt dome at Clovelly. Because of the salt dome's hourglass shape and small size, DOE's conceptual design was to place new caverns below and in between existing commercial caverns at the site. Additional geotechnical studies showed that this configuration would pose risks to the integrity of the existing caverns, infrastructure, and overall operation of the site. DOE concluded that its development for the Reserve is not feasible, and thus not reasonable, and did not analyze it in the final EIS. DOE also deleted from the final EIS the analyses of existing site expansions that had been proposed in combination with Clovelly. One of these combinations included expansion of Bayou Choctaw by 30 million barrels, which DOE later found desirable to reconsider, as discussed below.

Conceptual Design for Water Use Changed in Response to Comments

During the public comment period for the draft EIS, the U.S. Fish and Wildlife Service, Mississippi Natural Heritage Program, Gulf Restoration Network, Sierra Club Mississippi Chapter, and others expressed concern about the proposed withdrawal of water from the Leaf River, which would be used in solution mining to create storage caverns at the Richton site and later for removal of the stored oil from the caverns (drawdown). As commentators

(continued on next page)

Petroleum Reserve Expansion EIS (continued from previous page)

emphasized, the river has a highly variable but frequently low flow rate, and water withdrawal during certain low-flow conditions may adversely impact protected species.

DOE consulted with the U.S. Fish and Wildlife Service and the Mississippi Natural Heritage Program to identify other sources of fresh water. When this effort did not succeed, DOE modified the Richton alternatives in the final EIS to reduce dependence on the Leaf River by adding water from the Gulf of Mexico as a secondary water source. To do so, in the final EIS DOE proposed a larger pipeline that would allow transport of sea water to Richton during periods of low flow in the Leaf River for cavern creation, albeit at a slower rate than by use of fresh water.

Changed Circumstances Affected Preferences

The final EIS identified DOE's preferred alternative as developing a new storage facility at Richton and expanding the capacity of three existing sites: Bayou Choctaw, Big Hill, and West Hackberry (by 20, 80, and 15 million barrels, respectively). Following issuance of the final EIS, DOE continued to evaluate the Reserve's distribution capabilities, commercial activities, and other factors. The preferred alternative in the final EIS was no longer preferred by the time of decisionmaking.

To increase storage capacity at West Hackberry, DOE had proposed acquiring three existing commercial caverns. These caverns were purchased, however, by Sempra Pipelines and Storage Corporation in August 2006 as part of its gas storage system. In commenting on the final EIS, Sempra expressed its intention to use the caverns as early as Spring 2009. As a result, DOE concluded that it might not be able to acquire the West Hackberry caverns at a reasonable cost.

In addition, DOE's evaluation of the Reserve's distribution capabilities identified the need for additional oil reserves at Bayou Choctaw to address potential refiner demands in the lower Mississippi River valley and to achieve the Reserve's needed overall drawdown rate. DOE determined that it could meet these needs by increasing expansion at Bayou Choctaw by 33 million barrels (and Big Hill by 80 million barrels).

Supplement Analysis Examined Additional Options for Existing Sites

DOE prepared a supplement analysis (under 10 CFR 1021.314(c) of its NEPA implementing regulations) to analyze the potential environmental impacts at Bayou Choctaw from increasing expansion to 33 million barrels compared to the 20-million barrel



The final EIS analyzed use of a secondary water source to avoid withdrawal from the Leaf River, near Richton, below the level protective of the endangered Gulf sturgeon (4 to 8 feet at adult size), its critical habitat, and other species. (Photo: © Glenn H. Clemmer)

expansion analyzed in the final EIS. (As noted above, expansion of Bayou Choctaw by 30 million barrels was analyzed in the draft EIS, but removed from consideration when DOE decided not to consider the Clovelly site further.)

As shown in the supplement analysis, development at Bayou Choctaw of two new caverns of 11.5-million barrel capacity each (instead of 10-million barrel capacity each) would extend the duration of cavern leaching and brine disposal by about 4 months, but would not impact the salinity of the source water nor of the aquifer into which brine would be disposed. Use of these new caverns and an existing 10-million barrel commercial cavern would not substantially change the potential impacts from those analyzed in the final EIS. DOE concluded that the additional expansion at Bayou Choctaw was "not a substantial change to the proposed action that is relevant to environmental concerns" and that a supplement to the final EIS was not needed.

Mitigation Commitments Made

Richton was selected as the new site for development (with Big Hill and Bayou Choctaw as expansion sites) because, in part, it can be developed without impacts to commercial operations at or near the site and without high geotechnical risk, and its inland location provides a significant buffer to potentially damaging effects of hurricanes on surface structures. The Richton alternatives (with Richton as the new site and various combinations of expansions at existing sites) were not identified as environmentally preferable alternatives in the Record of Decision because development of the Richton site would affect several hundred acres of wetlands through more than 200 miles of pipeline and power line rights-of-way and may affect designated critical habitat of a protected species.

(continued on page 7)

Petroleum Reserve Expansion EIS *(continued from page 5)*

In its Record of Decision, DOE identified consultations that it will undertake with appropriate Federal, state, and local natural resource agencies to develop and adopt detailed mitigation measures. These consultations include a wetlands permitting process, in which DOE will prepare, among other analyses, a wetlands compensation plan. As expanding the Reserve may cause adverse impacts to cultural resources, DOE has signed Programmatic Agreements with Louisiana, Mississippi, and Texas, the Advisory Council on Historic Preservation, and tribes to ensure that DOE fulfills its responsibilities under the National Historic Preservation Act.

For More Information

LLQR reported on this EIS in an article on the Energy Policy Act of 2005 (September 2005, page 3) and on DOE's extension of public scoping following Hurricane Katrina (December 2005, page 30).

The following documents are available on the DOE NEPA website at www.eh.doe.gov/nepa/documents.html and the Strategic Petroleum Reserve website at www.fossil.energy.gov/programs/reserves/spr/expansion-eis.html: the Notice of Intent (70 FR 52088; September 1, 2005); *Draft Environmental Impact Statement on the Expansion of the Strategic Petroleum Reserve: Alabama, Louisiana, Mississippi, and Texas* (DOE/EIS-165, 1992); *Site Selection for the Expansion of the Strategic Petroleum Reserve Final Environmental Impact Statement* (DOE/EIS-0385; December 2006); the associated Supplement Analysis (DOE/EIS-0385-SA-1; February 8, 2007); and the Record of Decision, signed on February 14, 2007 (72 FR 7964; February 22, 2007).

For further information, contact the NEPA Document Manager, Don Silawsky, Office of Fossil Energy, at donald.silawsky@hq.doe.gov or 202-586-1892. 

Measures Identified in EA Process Protect Wetland

By: Donna Green, NEPA Document Manager, Chicago Operations Office

In planning new construction, DOE's Chicago Operations Office (CH) incorporated measures identified in an environmental assessment (EA) process to protect a recently restored wetland. The EA for Enhanced Operations of the Advanced Photon Source at Argonne National Laboratory – East (DOE/EA-1455, June 2003) evaluated the impacts of constructing and operating a Center for Nanoscale Materials, a proposed new experimental facility that had potential for impacting the watershed of a nearby wetland.



The Advanced Photon Source is a national synchrotron-radiation light source research facility funded by DOE's Office of Science. The restored wetland is the light area on the right edge of the photo (arrow), near the forested area and close to the site of the proposed new facility and an associated parking lot. The wetland is contiguous with diverse wooded and prairie areas and forms one of the largest expanses of high-quality habitat at the Argonne site.

As analyzed in an earlier EA, *Proposed Wetlands Management on the Argonne National Laboratory – East Site* (DOE/EA-1387, September 2001), DOE recently restored the wetland by removing invasive and nonnative species, conducting prescribed burns, reducing pesticide use in the watershed, and disabling a drainage tile network that had been installed at least 50 years earlier to allow farming. The measures aimed to increase biodiversity in the wetland, improve surface water and groundwater quality within its watershed, and increase total wetland area from 3 to 9 acres. The enlarged wetland will serve as a compensatory wetland bank to mitigate future actions that could result in wetland loss. The Laboratory has not yet conducted vegetation monitoring to gauge the success of the restoration effort, but has recently identified breeding populations of American toads, and chorus and green frogs.

The June 2003 EA considered potential impacts on the wetland due to stormwater runoff from the building and parking lot to be located within the wetland watershed. (Alternate parking lot locations outside the watershed were considered but did not meet project needs.) Because the action was not located in a wetland, a wetland assessment under the DOE regulations (10 CFR Part 1022) was not required. However, there would be impacts to the wetland from stormwater surges due to the increased impervious areas and surface runoff of pollutants, especially chloride from winter salting, petroleum residues, and sediments.

The conceptual design that was developed for the new facility and its parking lot included features to minimize impacts to the wetland:

- A basin to collect rain or snow runoff from the parking lot and pump it away from the wetland through a grassy swale planted with deep-rooted native grasses.
- An oil and grease filter to remove petroleum residues from parking lot overflow water.
- Another basin, planted with deep-rooted native plants, to collect roof runoff from the new building and slowly release it through a flow restrictor into a culvert leading to the wetland. This would minimize stormwater surges into the wetland.

CH received valuable informal advice from the local DuPage County environmental regulatory agency and the U.S. Army Corps of Engineers Chicago District Office in preparing the EA. The County agency reviewed and confirmed CH's hydrological analysis. The Corps advised CH on stormwater control design features to protect the wetland. This consultation was informal because a Clean Water Act Section 404 permit was not required.

For additional information, contact Donna Green at donna.green@ch.doe.gov or 630-252-2264. 



This wetland, adjacent to the Advanced Photon Source (background), was restored in less than two years by disabling a drainage tile network.

NEPA and Negotiation Combine to Prevent Blackouts while Protecting a Valuable Watershed

By: Gene Lynard, *NEPA Document Manager, Bonneville Power Administration*

The intent and spirit of NEPA again helped Bonneville Power Administration (BPA), DOE's power marketing organization in the Pacific Northwest, win support for a controversial 500-kilovolt transmission line through the City of Seattle's Cedar River Municipal Watershed. The preferred alternative, outlined in the *Kangley-Echo Lake Transmission Line Project Environmental Impact Statement* (DOE/EIS-0317-S1, June 2003), will help BPA keep the lights on in the Northwest.

"While we have disagreed over the best location of this proposed transmission line, the city understands the need to provide for power transmission reliability. We are pleased that we have been able to negotiate a proposed settlement with BPA that protects this critical source of our water supply and enhances our restoration activities."
— Mayor Greg Nickels, City of Seattle

Getting support for a new transmission line is never easy, but when your proposal threatens the drinking water of a major city and goes through pristine habitat for Federally-listed fish and wildlife, you had better be ready to deal. And BPA, through the NEPA process and lengthy negotiations with stakeholders, has successfully crafted a way for the environment to come out on top.

BPA identified a critical need in 1999, i.e., a weakness in the high-voltage transmission system in the Seattle area that could lead to brownouts, or even blackouts, during extremely cold periods when demand for power is highest, and as early as the winter of 2002-2003. Without some kind of fix, the area could go dark when people need power for electric heat. Planners started brainstorming solutions, and the NEPA staff began identifying the issues and concerns.

Potential Impacts to a Valuable Watershed

Seattle officials, tribal governments, national and local environmental groups, and some nearby residents opposed plans for the proposed transmission line when the Draft EIS was circulated for public review in the

summer of 2001. They thought any transmission line through the Cedar River Watershed, which supplies water to about 1.3 million people in the Puget Sound area, would harm water quality and fish and wildlife habitat. Just before the project was proposed, the City of Seattle had, through its own contentious process, finalized a Habitat Conservation Plan (HCP) under the Endangered Species Act for the northern spotted owl and marbled murrelet and for future returns of chinook salmon. The HCP allowed no commercial logging in the Watershed. BPA's new transmission line would require cutting about 90 acres inside the Watershed.



Melting snow and rain are gathered and stored in reservoirs such as this one created by the Masonry Dam. Other images of the Watershed are available in the virtual tour at Seattle Public Utility's Web site (www.cityofseattle.net/util/cedarwatershed).

The approximately 90,000-acre Watershed provides water of such purity that it need not be filtered. If construction or other activities contaminated the water, it could leave Seattle responsible for a \$100 million filtration system for its water supply in a time of tight municipal budgets.

Comments Lead to Supplement With Additional Alternatives

All action alternatives analyzed in the Draft EIS crossed the Watershed because going around the Watershed meant demolishing homes. Though of concern to local residents, the HCP stakeholders made it clear that they wanted alternatives outside the Watershed analyzed along with a completely different solution – a non-transmission alternative, such as conservation. And they wanted mitigation. They wanted all this in a Supplemental Draft EIS before any decision was made.

continued on next page

Protecting a Valuable Watershed

continued from previous page

BPA reopened scoping and prepared a Supplemental Draft EIS that evaluated four routes that went around the Watershed, new information about the preferred alternative, and a non-transmission alternative. The non-transmission alternative included incentives to reduce peak demand, energy efficiency, and alternate generation sources, which provided some benefits, but only delayed the need for additional transmission capacity for a few years.

Negotiations and a Commitment to Mitigation Result in Broadly Accepted Project

BPA continued to meet with environmental groups and tribes to better understand their concerns throughout the

*"We applaud BPA's efforts to mitigate the impacts from the project and will work with BPA to ensure the intent of these commitments is translated into real forest and water protection."
— Charlie Raines, Director, Sierra Club's Cascade Checkerboard Project*

process. BPA also met regularly with Seattle's representatives to hammer out an agreement that would meet the City's concerns in exchange for BPA receiving an easement across the Watershed. BPA offered a creative mitigation strategy: land purchases and a promise to not seek additional land across the Watershed again.

BPA purchased lands adjacent to the Watershed that would be transferred

to the City of Seattle (almost 600 acres) or sold with conservation easements attached (about 500 acres). This includes some 350 acres above the Raging River Basin, abutting the Watershed. These purchases compensated for the loss of about 90 acres of timber in the Watershed and drew praise from local environmental groups.

BPA also identified several new mitigation measures and state-of-the-art design methods that would effectively minimize potential impacts of constructing the transmission line, such as flying preassembled tower sections and fallen timber in and out of the Watershed, and using non-toxic vegetable oil in all hydraulic equipment within the Watershed.

Finally, in its agreement with the City of Seattle, BPA committed to (1) measures protecting the City against any threat to its water supply during project construction and for two years thereafter, (2) funds to the City to improve security and finance restoration within the Watershed, and (3) costs for timber removal.

A NEPA Success Story

Commentors spared no one's feelings when they responded to the Draft EIS, and NEPA staff used those comments to prepare a successful Supplemental Draft EIS. Because BPA was responsive to stakeholders' comments

How did BPA win the needed support? Through lengthy negotiation and an attempt to try and meet everyone's needs.

and concerns, there were far fewer comments on the Supplemental Draft EIS, and BPA could prepare an abbreviated Final EIS, saving both time and expense. BPA issued the Final EIS on June 20, 2003, less than six months after issuing the Supplemental Draft EIS.

Construction began the day following the record of decision (68 FR 44532; July 29, 2003) and is scheduled to be complete in December 2003.

The extent of stakeholders' concern was far greater than realized when project planning began. The NEPA process made clear to the decisionmakers which critical resources were of most interest. BPA's extra effort to address stakeholders' concerns by developing compensatory mitigation measures through the NEPA process and negotiations resulted in a win-win-win outcome for BPA, the environmental community, and the users of electricity in the Puget Sound area – the ultimate beneficiaries of the project.

For more information, contact Gene Lynard at gplynard@bpa.gov or 503-230-3790. LL

NEPA Helps to Protect Sagebrush Steppe Ecosystem

By: Roger Twitchel, NEPA Compliance Officer, DOE Idaho Operations Office

NEPA can help DOE not only to make decisions about new projects but also examine ongoing activities and plan ways to reduce adverse environmental impacts. DOE's Idaho Operations Office successfully used the NEPA process to evaluate trade-offs among alternatives and determine the best way to preserve the natural sagebrush steppe ecosystem at the Idaho National Engineering and Environmental Laboratory (INEEL). INEEL contains the largest remnant of undeveloped, ungrazed sagebrush steppe remaining in the Intermountain West. Current rangeland management practice in combination with an altered wildfire process threatens to irreversibly convert what remains of the sagebrush steppe ecosystem into a landscape dominated by non-native cheatgrass.

Wildfire in the Sagebrush Steppe

Fire is a natural component of the sagebrush steppe ecosystem, typically occurring on a 40- to 70-year cycle. The natural ecosystem consists of shrubs – most notably sagebrush, an abundance of perennial grasses, and annual grasses and broadleaf herbaceous plants. When this native vegetation burns, grasses and herbaceous plants survive (perennials re-sprout from underground stems and roots, annual grasses from seed) but the sagebrush is killed. Sagebrush will recolonize only as wind-dispersed seed from unburned areas. Once established, it will take about five years to mature and will compete with the other native plants until a natural balance is reached.

The introduction of non-native annual plants, particularly cheatgrass, alters the natural fire and recovery cycle. After a fire, cheatgrass seeds quickly germinate, and the plants successfully compete for moisture and nutrients with native seedlings and surviving plants. It grows rapidly during cool, wet springs, goes to seed, and then becomes parched during the extended dry periods in late spring and early summer. Cheatgrass can quickly form a nearly continuous carpet of fuel that is extremely prone to burn. The frequency of fire increases, cheatgrass continues to increase, and sagebrush eventually disappears from the plant community.



Cheatgrass is thought to have been introduced into the Intermountain West in the 1880's in impure seed.

EA Addresses Fire Management

The Idaho Office decided to prepare an EA to address concerns that the traditional fire management strategy at INEEL – which focused solely on extinguishing fires – was adversely impacting natural resources by destroying habitat for species dependent on sagebrush, affecting cultural resources, and creating massive dust storms after a fire. Of particular concern were impacts on the eastern subspecies of the greater sage grouse, a bird that inhabits the INEEL site. The Institute for Wildlife Protection petitioned the U.S. Fish and Wildlife Service (FWS) in July 2002 to list the eastern subspecies as endangered. (To date there have been seven petitions to the FWS to list the sage grouse or one of its subspecies.)

The *INEEL Wildland Fire Management Environmental Assessment* (DOE/EA-1372, April 2003) was not associated with any project, and there was no budget set aside to prepare it. The Idaho Office's management and operating contractor made the EA a reality by juggling other activities to ensure its completion.

The EA evaluated four alternatives for managing wildfires at INEEL, each of which included options for pre-fire, fire suppression, and post-fire activities:

- *Maximum Fire Protection Alternative* – implement the full range of pre-fire, fire suppression, and post-fire activities. It would focus on creating firebreaks and aggressively fighting all fires.
- *Balanced Fire Protection Approach* – use minimum impact suppression tactics (e.g., allowing fires to burn to a natural barrier, placing containment lines to minimize impacts on significant environmental resources, minimizing soil disturbance) in order to suppress wildfires with the least impact on the land. It would minimize fuel loading and fire potential by developing a program for long-term management of native vegetation.
- *Protect Infrastructure and Personnel Safety* – include only those activities necessary to protect primary INEEL facilities. It would include pre-fire activities needed to provide safe spaces for firefighters within the site.
- *No Action Alternative* – continue traditional pre-fire, fire suppression, and post-fire activities, including fighting fires aggressively. This alternative differs from the Maximum Fire Protection Approach in that it prescribes significantly fewer pre-suppression activities, such as the creation of defensible space and fuel management zones, and no post-fire activities except for dust control.

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Sagebrush Steppe Ecosystem

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Interagency Consultations Protect Natural Resources, Enhance Safety and Planning

DOE could not have reasonably assessed these alternatives without examining the general condition of sagebrush steppe in Idaho and the wildfire strategies of other area agencies. Thus, the Idaho Office contacted other organizations with interests in and knowledge of the natural resources on the site: Idaho Department of Fish and Game, Shoshone-Bannock Tribes, FWS, and the Bureau of Land Management (BLM). BLM, in particular, was

At the end of the interagency consultation process, everyone was more aware of the long-term impacts and the concerns of competing interests.

interested because it was beginning an EIS and Plan Amendment for *Fire, Fuels, and Related Vegetation Management Direction* on wildfire management in the Upper Snake River District in southeast Idaho.

The organizations shared information about existing ecosystem conditions and determined information needed to aid in successful restoration of burned areas. In addition to useful suggestions for the EA, the consultation process has

enhanced safety for all fire crews deployed at INEEL because DOE and BLM have coordinated their fire suppression and control tactics.

The EA provided a qualitative assessment and comparison of the potential impact of each alternative on air, water, wildlife, wildlife habitat, and cultural resources. Based on this analysis, the Idaho Office determined that the Balanced Fire Protection Approach will best protect natural resources. Implementing this alternative will, for example, conserve habitat critical to sagebrush-dependent species, such as the greater sage grouse. The other interested agencies agreed that this alternative was the best strategy for managing wildfires at INEEL. DOE determined that the selected alternative would not have, and in fact, likely would prevent, a significant impact on the human environment.

The NEPA process helped DOE's Idaho Office plan wildfire management actions to minimize their potentially significant environmental impacts on the site's natural resources. This was an innovative, cooperative approach to using NEPA to improve environmental protection, safety, and site-wide planning.

For more information, contact Roger Twitchell at twitchrl@inel.gov or 208-526-0776. 

Site-Wide EA Improves Planning at Wind Research Center

By: Roselle Drahushak-Crow, *NEPA Document Manager, Golden Field Office*

Using a site-wide EA to consider the environmental effects of site development is “business as usual” for DOE’s Golden Field Office and National Renewable Energy Laboratory (NREL). In May 2002, the Office issued its *Final Site-Wide Environmental Assessment of National Renewable Energy Laboratory’s National Wind Technology Center* (DOE/EA-1378) for the 305-acre National Wind Technology Center, replacing a November 1996 site-wide EA of similar title (DOE/EA-1127). Located between Golden and Boulder, Colorado, the wind research center is one of the two NREL campuses that support energy efficiency and renewable energy research.

“The NEPA process requires us to plan several years out, to envision the impacts of our actions, and to plan for mitigating those impacts,” said John Kersten, Manager of the Golden Field Office, which administers the management and operating contract for NREL. “The result is that projects are better planned and more likely to be completed on schedule.”

Management Involvement Improves Effectiveness

The NEPA team ensured that the new EA would be useful by encouraging ownership among managers and other decisionmakers. The Golden Field Office initiated the

The NEPA process has proven to be a valuable planning tool for our office and for NREL.

– John Kersten, Manager, Golden Field Office

process by working with NREL to organize a multidisciplinary team of both organizations’ managers, site operations personnel, and environment, safety, and health staff.

This team conducted internal scoping to identify the components of the proposed action in the EA, which is to operate the wind research center for alternative energy research with new and improved capability. The proposed action includes permanent physical improvements such as buildings and equipment, utilities, and other infrastructure. It also includes activities that do not require permanent facilities or infrastructure, such as research programs, facility operations, management practices, and maintenance activities. By examining this broad set of proposals and activities, the team improved the quality of the EA and ensured its relevance. Team members also provided feedback into other processes, such as the site development plan and program planning, that sparked additional analysis.

“Through the EA, we proactively identified the need to reroute a natural gas pipeline installation to avoid an environmentally sensitive area, thereby saving time and costs on the project,” said Randy McConnell, Director of Environment, Safety, and Security for NREL. This pipeline would tap into an existing supply line and extend approximately two-thirds of a mile across privately owned property adjoining the site. The environmentally sensitive area is a drainage basin that potentially could serve as habitat for the Prebles Meadow Jumping Mouse, a threatened species.

Integrating NEPA and Site Planning

Although site-wide EAs typically have a five-year shelf life, the multidisciplinary team elected to address both short-term (five years) and long-term (up to 20 years) site improvements. This approach not only extends the document’s useful life, but also broadens the scope of the analysis to take into account the unpredictable nature of frequently changing priorities in Federal program funding.

For a “reality check,” the team worked with the NREL budget planning office to review the activity and improvement descriptions. Short-term projects that were in a relatively more advanced planning stage, including facility modifications and construction, infrastructure improvements, site activities, and routine maintenance, were analyzed in greater detail. Fewer details were available for the long-term projects (ranging from facility construction to research, development, and testing), but including these projects helped planners and managers to think about options for future improvement scenarios.

These various scenarios were incorporated into a bounding analysis approach for analyzing the potential environmental impact. The site was partitioned or “zoned” according to possible future uses such as new facilities,

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The site-wide EA evaluated the impacts of adding more test turbines like this one at the site.

Site-Wide EA Improves Planning *(continued from page 14)*

test pad locations for wind turbines and other technologies, and “no-build” or conservation management areas. The zones provided a framework for quantifying future activities and potential impacts, such as the amount of ground to be disturbed and the square footage of improvements. It also helped the program to plan for long-term priorities such as the capability to test one megawatt and larger wind turbines. Such an analysis will provide a guide for planning future projects and activities.

The benefits of enlisting an integrated site planning approach in the site-wide EA process will become more

apparent during the document’s five-year life expectancy and beyond. When site managers grapple with decisionmaking, the site-wide EA will be a resource to help determine which areas of the site are best suited for a proposed activity, what environmental sensitivities need to be considered, how a proposal compares with original plans, and what has changed on the site. Ultimately, the planners and managers who use this document to assess the environmental implications of site development initiatives will measure the success of this process. For further information, please contact me at roselle_drahushak_crow@nrel.gov or 303-275-4775. 

Los Alamos Project Guided by MAP

By: Todd Haagenstad, *Los Alamos National Laboratory Ecology Group*
 Carl Sykes, *Office of NEPA Policy and Compliance*

Under DOE NEPA regulations, after the completion of each Final Environmental Impact Statement (EIS) and its associated Record of Decision (ROD), DOE must prepare a Mitigation Action Plan (MAP) that addresses any mitigation commitments expressed in the ROD and explains how the mitigation commitments will be planned and implemented (10 CFR 1021.331). At Los Alamos National Laboratory (LANL), the MAP for the Dual Axis Radiographic Hydrodynamic Test (DARHT) facility has been successfully implemented for about six years – a notable example of how a MAP can be effectively institutionalized at a DOE site.

The DARHT MAP, issued in January 1996, provides direction for implementing measures to reduce or avoid the potential adverse environmental impacts of the selected alternative. It also establishes Action Plans to carry out each mitigation commitment in the DARHT ROD (60 FR 53588; October 16, 1995). The status of implementation is managed through a tracking system and reported to the public and stakeholders via a MAP Annual Report issued in January.

Integrate with Project Management

The steps that led to successfully institutionalizing the DARHT MAP began early in the NEPA process. All members of the EIS team understood that a MAP would be needed, and the project staff were able to incorporate mitigation measures directly into project management documents and plans for DARHT facility design, construction, and operation even before the MAP was issued.

Because of this close integration of the NEPA process with project management, the project design team addressed many of the mitigation commitments early in the DARHT project-planning phase. For example, in

Potential Impacts Addressed in the DARHT Mitigation Action Plan	
Area of Concern	Example of Mitigation Action
Cultural Resources, especially a particular archaeological site	Designing the physical orientation of the DARHT facility to ensure that shrapnel would not adversely affect the important nearby Nake'muu archaeological structure, and monitoring the condition of Nake'muu over time to ensure that DARHT operations are not causing changes to the structure.
Human Health	Construction of an earthen berm over and around the accelerator tunnel to minimize radiation exposure to involved and collocated workers.
Soils, especially soil loss and contamination	Revegetation with native plants and reforestation of land disturbed by construction activities.
Biota, including threatened and endangered species	Development of a Habitat Management Plan, which serves all of LANL as well as the DARHT facility. (See <i>Lessons Learned Quarterly Report</i> , June 1999, page 1.)
General Environment, including air and water	Annual environmental contaminant monitoring of soils, vegetation, invertebrates, small mammals, birds, and large mammals around the DARHT facility site.



The Nake'muu site, a 50-room pueblo occupied between 1300 and 1400 and the only prehistoric pueblo at LANL with its original walls, was protected from shrapnel by orientation of the DARHT facility.

consultation with tribal representatives and the State Historic Preservation Office, a sensitive archaeological site in the project area was left in place and capped to prevent adverse effects from construction of the facility. Another site was protected from shrapnel by orientation of the DARHT facility. Completion of these commitments helped the project team gain approval for the final design and authorization to begin construction.

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Guided by MAP

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Other mitigation measures from the NEPA process – particularly for construction-related impacts – were incorporated into the project construction documents. For example, the DARHT facility required an exclusion fence for worker safety and operations security; however, a standard security fence would adversely affect elk movement across the relatively narrow mesa top. After further study, including agency consultation and field studies, the fence design was modified to allow elk movement while still meeting security and safety requirements.

MAP Implementation Continues While DARHT Operates

Initially, the DARHT MAP was designated as a formal, line-item task during the design and construction phases. The roles and responsibilities of all parties were defined through formal work agreements updated for each fiscal year funding cycle.

After completion of DARHT construction in 1999, LANL transferred day-to-day management and operation of the facility from its DARHT project office to a facility manager. DOE staff, the DARHT MAP project leader, and project office staff had been thoroughly discussing the scope, schedule, and implications of the DARHT MAP with the facility manager a year before the transition. This allowed for a smooth transition to facility operation and guaranteed long-term implementation of the MAP. In the present operations phase of the project, the facility manager remains closely involved in MAP activities by reviewing all mitigation-related results and documents. Because he understands the MAP, the facility manager has directly assisted DOE and the DARHT MAP project leader in modifying and adapting the mitigation measures to new conditions, where needed.

A well-managed mitigation program like this helps ensure that adverse impacts are minimized, that mitigation measures can change over time if necessary, and that the environment is protected over the long term. All this can happen when a MAP is “baked” right into the design and long-term management plans for a project – and is not just the “frosting” on the top.

[This approach embodies the Council on Environmental Quality’s objective in its NEPA reinvention initiative: “Agencies should take a new approach... one that takes the standard NEPA paradigm of ‘predict, mitigate, implement,’ and incorporates monitoring and adaptation....” (See Lessons Learned Quarterly Report, June 1997, page 3.)]



A modified security fence design allows elk to pass across the DARHT facility site.

Recommendations

- ✓ Have NEPA Document Managers work directly with project design staff to incorporate MAP activities into project design documents.
- ✓ Fund and implement MAPs through a project’s facility management group to ensure long-term “ownership” of mitigation activities.
- ✓ When developing a MAP, provide means by which mitigation measures may be fine-tuned based on future experience and periodic review.

For more information, contact Todd Haagenstad at hth@lanl.gov or 505-665-2936, or Elizabeth Withers, Los Alamos Area Office NEPA Compliance Officer, at ewithers@doeal.gov or 505-667-8690.

Mitigation Measures

Identify in EIS

Commit to in ROD

Incorporate in Design

Fund and Implement

Monitor

Adapt



LESSONS LEARNED

March 1, 2001; Issue No. 26

For First Quarter FY 2001

Innovative Field Research Benefits from NEPA Review



By: Paul Bayer, *NEPA Document Manager*,
and Clarence Hickey, *NEPA Compliance Officer, Office of Science*

The high costs and long times frequently needed to clean up contaminated Department of Energy (DOE) sites have created a demand for better and cheaper cleanup technologies. A promising new method for cleaning up subsurface contamination is bioremediation. However, field experience to validate laboratory results is lacking. Preparing an environmental assessment (EA) helped DOE's Office of Science plan an effective field-based research program to better understand bioremediation processes. The EA process also helped ensure that actual field studies would not have significant environmental impacts.



Workers obtain a soil core sample in the Field Research Center contaminated area.

Researchers need small-scale field sites for studies of basic biological and chemical processes associated with bioremediation of subsurface soil and water contaminated with metals and radionuclides. Therefore, the Office of Science needed to add a field component to its existing Natural and Accelerated Bioremediation Research (NABIR, pronounced "neighbor") Program.

Bioremediation – the use of microorganisms to degrade or transform contaminants to environmentally acceptable levels in soils, subsurface sediments, groundwater, surface water, and sludge.

NABIR Primer

Established in 1997, the NABIR Program funds and coordinates research by universities, private industry, and the DOE national laboratories.

EA Process Aids Site Selection and Design of Bioremediation Field Studies

The NABIR Program proposed a Field Research Center to test laboratory results. ("Center" refers to the research location and includes only temporary support structures and equipment, not new construction.) An EA (DOE/EA-1196, April 2000) helped identify and evaluate two alternative sites: an area (under Oak Ridge National Laboratory management) near the West End Tank Farm of the Y-12 National Security Complex at the Oak Ridge Reservation in Tennessee, and the 100-H Area (under Pacific Northwest National Laboratory management) of the Hanford Site near Richland, Washington. These locations met the Office of Science's preferred characteristics, including:

- Availability, at a DOE site, of a contaminated area and an uncontaminated (control) area, with comparable

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Innovative Field Research (continued from page 1)

hydrology and geology and of sufficient size to accommodate anticipated research projects for the remainder of the NABIR Program.

- Presence of heavy metals and radionuclides at levels high enough to require eventual cleanup but low enough to pose small risk during research activities.
- Expected stability of any active contamination sources for the remainder of the program.
- Ability to control public access while allowing year-round access for researchers and equipment.

The EA analyzes the potential environmental impacts of the No Action alternative – not establishing a Field Research Center – and the alternatives of locating the Center at Oak Ridge or Hanford. To analyze environmental impacts, the Office of Science had to determine the physical and biological parameters for reasonably foreseeable research activities. After broad consultations in the scientific community, the Office decided that research must meet certain criteria:

- Projects would be small-scale – involving less than 1 acre and a subsurface depth less than 75 feet.
- The NABIR Program would limit the type of research material; injection of genetically engineered microorganisms, human pathogens, and radioactive materials would be excluded.

Given the above constraints, the analysis found no potentially significant environmental impacts. The research activities would not affect environmentally sensitive resources, such as wetlands, floodplains, and endangered species. Contamination levels at each site were low enough to pose no health risks to workers or visiting scientists, even from inadvertent consumption of or contact with soil and groundwater samples.

Based on site visits, scientific and technical peer review of the proposals, and the environmental analysis – which included comment by Federal, State, and local agencies – DOE selected the Oak Ridge location, consisting of a 243-acre contaminated area and a 404-acre background area.

The EA and the finding that there would be no significant impacts apply only to actions that meet specified limitations. To help enforce these constraints on future research activities, the constraints were incorporated in the NABIR Program Management Plan, which was included in the EA as an appendix. The Plan specifies



The background (uncontaminated) area of the Field Research Center contains groundwater-monitoring wellheads.

that before a research project receives funding and may begin field activities, the responsible DOE Operations Office must complete an environmental, safety and health review, including whether the project requires further NEPA review. The Program Plan also requires a Field Research Center Management Plan and tiered plans to address health and safety, waste control, environmental compliance, contingencies for potential offsite migration of contaminants, and site closure.

Authors' Vision: NABIR Serves NEPA's Goals

The NABIR Program's goal – to validate laboratory experiments and test the effectiveness of potential new approaches for safe, efficient cleanup of DOE's legacy waste – is aligned with a broad goal of NEPA: to “attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences” (Section 101(b)(3)). Promoting remediation of wastes in-place may reduce the need to excavate and disturb land, and may lessen the risks to workers from construction-related accidents and exposures to radiological and chemical hazards. Through the NABIR Program, DOE is a better trustee of the environment.

The authors believe that DOE should strengthen the links between the analysis process for DOE proposals (under NEPA Section 102) and the decisions DOE makes to support the goals NEPA sets for the Nation (under Section 101). Without this connection, in the authors' opinion, the NEPA process is just process.

For more information on the NABIR Program, see “NABIR Primer: Bioremediation of Metals and Radionuclides ... What It Is and How It Works,” at www.lbl.gov/NABIR/primer/primer.html, or contact Paul Bayer at paul.bayer@science.doe.gov or 301-903-5324. 

LESSONS LEARNED

U.S. DEPARTMENT OF ENERGY

QUARTERLY REPORT

June 1, 2000; Issue No. 23

For Second Quarter FY 2000

Los Alamos Site-wide EIS Analyzed Wildfire Impacts, Prompted Mitigation Actions



A "sign" of the Los Alamos wildfire at Technical Area (TA)-53.

As DOE and the Los Alamos region cope with the effects of last month's devastating fire, the 1999 Los Alamos National Laboratory (LANL) Site-wide EIS has proved to be a valuable reference document. In fact, the NEPA process had earlier focused DOE attention on the risks of wildfire at LANL and prompted mitigation actions within the past year that reduced the severity of impacts of the fire. Moreover, the analyses in the Site-wide EIS will be useful in planning recovery programs.

The LANL Site-wide EIS (DOE/EIS-0238) included an accident scenario – an extensive wildfire initiated to the southwest of LANL near the border with the Bandelier National Monument – that closely mirrored the actual

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Los Alamos EIS Analyzed Wildfire Impacts (continued from page 1)

Cerro Grande Fire. That fire, ignited as a “prescribed burn” by the National Park Service on May 4, 2000, went out of control and burned about 50,000 acres of forest and residential land, including about 9,000 acres (approximately 30 percent) of the LANL site.

During the fire, DOE relied upon the EIS analyses to answer public inquiries and concerns, particularly regarding the potential adverse effects from the fire burning over contaminated areas. According to Elizabeth Withers, Los Alamos Area Office NEPA Compliance Officer, the EIS was “an extremely valuable tool for public relations credibility in a very emotional and difficult time.” The completeness of the assessment in the EIS, coupled with the onsite air monitoring, “helped to establish early on that there was no imminent danger to people resulting from the fire,” she said.

The detailed accident analysis (Appendix G of the EIS, which is posted on the DOE NEPA Web at tis.eh.doe/nepa/docs/docs.htm) covered the immediate impacts of such a wildfire on workers, the public and the environment. The analysis assumed that about 8,000 acres on LANL would be burned as well as portions of the Los Alamos townsite. “These scenarios are quite credible, in view of the present density and structure of fuel surrounding and within LANL and the townsite, as well as the occurrence of three major fires in the past 21 years,” the EIS stated. In considering the combined probability of fire-favorable conditions, the EIS concluded “that a major fire moving up to the edge of LANL is not only credible, but likely . . .”

Comments Focused Attention on Wildfire

The Draft LANL Site-wide EIS did not analyze a wildfire accident because under the initial screening methodology that scenario had not been considered plausible. However, comments at the public hearing on the Draft EIS from a forester at the nearby Santa Fe National Forest and written comments from the Department of the Interior focused attention on the issue. The commenters referenced a recent Forest Service report about the threat of wildfire. The Final EIS estimated that the frequency of this type of fire is 1 in 10 years.

Based on this high chance of fire identified in the EIS analysis, actions were begun immediately to reduce the wildfire risks at certain key facilities, including TA-54 (waste facility) and TA-16 (Weapons Engineering Tritium Facility). Trees were cut and wooden pallets on which waste drums were stacked were replaced with aluminum pallets.

With the completion of these actions, the Final EIS stated (conservatively) that the population dose from a site-wide fire would be reduced from an estimated 675 person-rem to 50 person-rem, thereby avoiding a potential for approximately 0.3 latent cancer fatalities.

The EIS also addressed the longer-term environmental impacts resulting from a fire, e.g., loss of protective



Wildfire scorched the grounds near Building 326 at Technical Area-46.

cover, runoff, soil erosion and sedimentation, effects on legacy contaminants, effects on biological systems, and effects on cultural resources. As stated in the EIS, “The consequences of a wildfire are diverse, continuing through time and space, and frequently having significant changes in geomorphology and biological communities and processes . . . Loss of vegetative cover will create a setting that can have pronounced effects on flow dynamics, soil erosion and sediment deposition.”

Mitigation Reduces Hazard

In the LANL Site-wide EIS Record of Decision (September 1999), DOE committed to develop by December 1999 a preliminary program plan for comprehensive wildfire mitigation, including construction and maintenance of strategic fire roads and fire breaks, creation of defensible space surrounding key facilities, and active forest management to reduce fuel loadings. The Mitigation Action Plan, October 1999, states that the wildfire hazard at LANL was currently being reduced by thinning trees, maintaining fire roads and fire breaks, and other measures.

The Los Alamos Area Office was about to issue a Wildfire Management Plan Programmatic EA for pre-approval review when the fire forced a change in plans. That EA is now being revised in light of the fire and will be issued shortly.

An interagency Burned Area Emergency Rehabilitation Team is working onsite to address immediate recovery actions. The Team has a NEPA unit, which has initiated an informal consultation with the Council on Environmental Quality regarding emergency NEPA procedures.

According to John Ordaz, Defense Programs project manager for the LANL Site-wide EIS, the NEPA process worked well in this case because the EIS team “was determined from the outset to prepare a useful document.” When the EIS team heard the concerns about wildfire at the public hearing, “we investigated the claims and the science behind the analysis.” Then the team found ways to reduce the fire load for the high risk areas. “It was the dedication of the EIS team that got the mitigations implemented,” Mr. Ordaz said. 

LESSONS LEARNED

September 1, 2000; Issue No. 24

For Third Quarter FY 2000

Emergency NEPA Procedures Invoked for Actions Taken after Los Alamos Fire

To avert further harm in the wake of the May 2000 Los Alamos wildfire, DOE is taking emergency actions with potentially significant impacts, without preparing an EIS. Instead, DOE is proceeding under “alternative arrangements” to comply with NEPA, as provided under 40 CFR 1506.11, a section of the Council on Environmental Quality (CEQ) NEPA regulations that deals with emergency circumstances. The specific alternative arrangements were established in consultation with CEQ, as discussed further below. DOE’s post-fire emergency activities include constructing a 70-foot-high water retention structure in Pajarito Canyon to protect

Los Alamos National Laboratory (LANL) nuclear facilities and the downstream communities from flooding due to summer rainstorms and possible contaminant transport.

Agencies seldom have invoked the emergency provision of the CEQ regulations, only about 30 times in 22 years, in cases that demanded immediate action to respond to threats to life, national security, or an important resource. Based on DOE records, this is only the third time DOE has used these procedures. The other cases involved the Bonneville Power Administration’s actions to save the endangered sockeye salmon on the Snake River and the threatened failure of the Par Pond Dam at the Savannah River Site, both in 1991.



A 70-foot-high retention structure, shown here under construction by the U.S. Army Corps of Engineers, is among the DOE actions taken in response to the Cerro Grande Fire at Los Alamos.

After consulting with CEQ on the Los Alamos wildfire, DOE published a Notice of Emergency Action and is now preparing a Special Environmental Analysis to evaluate the environmental impacts of the completed and ongoing emergency actions. This analysis is a major component of DOE’s NEPA compliance for the emergency actions extending through November 2000.

Emergency Actions Have Net Beneficial Impacts

The fire began on May 4 when high winds caused a prescribed burn within the Bandelier National Monument in New Mexico to spread out of control.

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NEPA staff positions open. Apply by September 8. See page 2.

Emergency NEPA Procedures for LANL (continued from page 1)

DOE and other agencies immediately took action to contain and extinguish the fire and limit its damage – establishing clearings for fire lines, clearing access roads and improving existing roads for heavy transport equipment and fire trucks, cutting down trees to protect utilities and structures, setting small backfires to protect buildings and utilities, and dropping water and fire-retardant slurry from low-flying helicopters and airplanes. These actions taken during the fire had relatively minor environmental impacts that were primarily beneficial.



Recovery Team Undertakes Broad Range of Post-Fire Actions

Post-fire runoff, shown here emerging from a culvert, is now black with soot.

By the time the fire was brought under control two weeks later, it had burned almost 43,000 acres, including 7,650 acres on LANL. The fire's destruction of vegetation cover left the area vulnerable to soil erosion and flooding from

summer rainstorms. LANL hydrologists estimated that runoff could be significantly greater than before the fire, potentially threatening the property and well-being of the 10,000 residents located downstream of the DOE lands in White Rock, the Pueblo of San Ildefonso, and the Pueblo of Cochiti. Soil erosion and flooding also could threaten to release hazardous and radioactive contaminants from 168 potential release sites and two nuclear facilities at LANL. It may take years to decades in some locations for enough vegetation to become established on hillsides and canyons to deter soil erosion and flooding.

Because July and August are peak months for rainstorms, the post-fire conditions justified taking further emergency actions without sufficient time to prepare an EIS. These emergency response actions have a net beneficial impact, although potential environmental impacts to specific receptors range from beneficial to adverse. The actions most likely to result in adverse impacts include removing potential contaminants, especially in canyon bottoms and floodplains. Although these actions would reduce the potential spread of contaminants, by removing additional vegetation they would also increase the potential for soil erosion. Flood control mechanisms, such as berms, dams, sediment traps, and catchment basins, alter local drainage patterns and also could cause adverse environmental impacts.

Post-Fire Emergency Actions at LANL

- **Environmental Damage Assessment:** On-foot and aerial surveys; repairing and replacing air and surface water monitoring stations; contaminant monitoring
- **Potential Release Sites:** Stabilizing and protecting damaged or vulnerable sites; treating, removing, and disposing of contaminants; excavating canyon bottoms
- **Cultural Resources:** Assessing, protecting, and stabilizing damaged or vulnerable sites
- **Threatened and Endangered Species:** Assessing fire and post-flood impacts on threatened and endangered species and their habitats
- **Utilities and Infrastructure:** Protecting and repairing buildings, structures, roads, and utilities; decontaminating or demolishing contaminated buildings
- **Hazard Reduction Actions:** Stabilizing soils and reseeded; improving, replacing, and installing culverts; retaining or diverting stormwater runoff; relocating hazardous material and special nuclear material; removing dead and damaged trees
- **Other Recovery Actions:** Staging and storing equipment and building materials, installing temporary housing

DOE Consults with CEQ, Commits to Public Involvement

In May and early June 2000, officials of DOE and the other Federal agencies represented on the Cerro Grande Fire Burned Area Emergency Rehabilitation Team consulted with CEQ regarding environmental review for the emergency actions. In a June 15 letter documenting

continued on next page

Emergency NEPA Procedures for LANL (continued from previous page)

these consultations, Henry Garson, NEPA Compliance Officer for the National Nuclear Security Administration's Office of Defense Programs, described DOE's plans and commitments for alternative NEPA compliance. DOE would issue a Notice of Emergency Action, provide a range of public involvement opportunities, monitor the effectiveness and environmental effects of emergency actions, make monitoring results public and consider any resulting comments, and modify actions during implementation to mitigate adverse effects. DOE also committed to prepare a Special Environmental Analysis, to be issued in September 2000, to evaluate the environmental impacts of the completed and ongoing emergency actions.



Newly installed concrete barriers protect the historic Pond Cabin from potential stormwater damage. The cabin, built in 1914, is listed on the New Mexico State Register of Historic Places.

These alternative arrangements for complying with NEPA proved satisfactory to CEQ, as stated in the June 15, 2000, response from Dinah Bear, General Counsel: "We commend DOE for its commitment to provide for continuing public involvement, including soliciting comment on the Notice of Emergency Action, the Special Environmental Analysis, and on monitoring results and prospective mitigation." CEQ requested a brief report summarizing the conduct of the alternative arrangements and identifying any lessons learned or recommendations that DOE thinks would be useful to consider in future emergency situations, which DOE agreed to provide when the alternative arrangements are concluded.

DOE Publishes Notice of Emergency Action Required under 10 CFR 1021.343

DOE then issued a Federal Register Notice (65 FR 38522; June 21, 2000) that listed past, current, and planned DOE emergency actions from the beginning of the fire through November 2000. The Notice also addressed the potential environmental impacts of these emergency actions and

possible mitigation measures, and DOE's plans for continuing public involvement and preparation of a Special Environmental Analysis. DOE has held weekly public meetings (until recently broadcast on local radio) and uses a Web site, press releases, telephone information line, and informal consultations to provide continuing information to stakeholders. DOE and the other agencies taking emergency actions have consulted with the affected Pueblos, and have accommodated their requests to preserve locations of cultural value. The U.S. Fish and Wildlife Service, State Historic Preservation Officer, and Advisory Council on Historic Preservation also were consulted. In addition, DOE established a Public Advisory Group to focus on communications issues as they relate to potential runoff and flood mitigation activities.

Information Sources

Additional information, including photos and the Rehabilitation Plan, is available on the Web site of the Cerro Grande Fire Burned Area Emergency Rehabilitation Team at www.baerteam.org/cerrogrande/. The Notice of Emergency Action is available on the DOE NEPA Web at tis.eh.doe.gov/nepa/ under DOE NEPA Announcements (and also at the LANL Web site, www.lanl.gov/worldview/ under Cerro Grande Fire). When issued, the Special Environmental Analysis will be available on the DOE NEPA Web under DOE NEPA Analyses.

For information on the role of the wildfire scenario accident analysis of the LANL Site-wide EIS in prompting mitigation actions, see *Lessons Learned Quarterly Report*, June 2000, page 1. LANL's *Wildfire 2000*, August 2000, provides a more detailed comparison of the EIS postulated accident with the actual fire and is available on the LANL Web site at

Cerro Grande Fire Burned Area Emergency Rehabilitation Team Members

<i>Federal</i>	<i>State and Local</i>
Department of Energy	State of New Mexico
Forest Service	County of Los Alamos
Natural Resources Conservation Service	University of California
National Park Service	Pueblos
Bureau of Indian Affairs	Santa Clara Pueblo
	San Ildefonso Pueblo

continued on page 6

Emergency NEPA Procedures for LANL (continued from page 5)

<http://lib-www.lanl.gov/la-pubs/00393627.pdf>. DOE issued an EA on the *Wildfire Hazard Reduction and Forest Health Improvement Program at LANL* (DOE/EA-1329) in August. For further information, contact Elizabeth Withers, NEPA Compliance Officer, Los Alamos Area Office, at ewithers@doeal.gov, or phone 505-667-8690. 

Thank You, Elizabeth Withers

The Office of NEPA Policy and Compliance extends its appreciation to Elizabeth Withers, the Los Alamos Area Office NEPA Compliance Officer, for her hard work in coordinating NEPA compliance for emergency actions taken by DOE in response to the Cerro Grande Fire. Under difficult circumstances, Elizabeth kept affected parties informed of fast-breaking events, while managing the preparation of NEPA documents and coordinating the Department's efforts with other agencies, particularly on matters pertaining to endangered species and protection of cultural resources.

Water Retention Structure Challenged

The Army Corps of Engineers is constructing for DOE a 70-foot-high water retention structure in Pajarito Canyon to protect the residents of White Rock and LANL facilities, including Technical Area 18, which contains nuclear facilities. Runoff control will be needed for several years until the groundcover regenerates. The structure, to be completed in September, will not hold back water permanently like a conventional dam, but instead is designed with a free-flow outlet structure to completely release impounded floodwater at a controlled rate within 96 hours. Forest Guardians, an environmental organization based in Santa Fe, questions the need for the "dam" and has filed a Notice of Intent to sue the Corps of Engineers for alleged violations of Section 404 of the Clean Water Act.

LESSONS LEARNED

U.S. DEPARTMENT OF ENERGY

QUARTERLY REPORT

March 1, 2000; Issue No. 22

For First Quarter FY 2000

Hanford Comprehensive Land-Use Plan EIS Helps DOE Preserve Unique Resources

By: Thomas W. Ferns, NEPA Document Manager, *Richland Operations Office*, and Yardena Mansoor, *Office of NEPA Policy and Assistance*

A 50-year land-use plan for the Hanford Site? Some said it couldn't be done. Too many factions, they said, with irreconcilably different visions for the future. Would NEPA be a help or a hindrance in developing such a land-use plan?

It turns out that the Hanford Comprehensive Land-Use Plan EIS Record of Decision (ROD) (64 FR 61615; November 12, 1999) marks the end of a successful, albeit long and arduous planning process. It was a process that many stakeholders – whose diverse views could not all be accommodated – acknowledged was open and fair. Importantly, the EIS allowed DOE to make decisions immediately to preserve uniquely valuable natural

resources at the Site – notably expanding a National Wildlife Refuge on the Wahluke Slope, on the northern shore of the Columbia River within the Hanford Site. Over a longer term, the Record of Decision seeks to balance the Department's continuing land-use needs at the Hanford Site with its desire to preserve important ecological and cultural values of the Site and allow for economic development in the area.

Mapping out a long-term comprehensive blueprint for the 586-square-mile Hanford Site in southeastern Washington was no easy task. The experience demonstrates the versatility and usefulness of the NEPA review process in land-use decision making, and the importance of a robust stakeholder involvement process.

This article examines the relationship between Hanford's remedial action and land-use decision making, describes the stakeholder involvement approaches (first with a stakeholder working group and then with cooperating agencies), and describes the environmental benefits from this NEPA process.

Initial EIS Scope: Remediation and Land Uses for Contaminated Areas

Early in 1989, DOE negotiated a Federal Facility Agreement with the U.S. Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology) that established decision-making responsibilities and an enforceable schedule for remediation of the Hanford Site.



The White Bluffs of the Wahluke Slope rise above the Hanford Reach of the Columbia River.

continued on page 4

Hanford Comprehensive Land-Use Plan EIS (continued from page 1)

The cleanup negotiators soon realized that a plan for land uses could facilitate remediation planning. Otherwise, specific land-use decisions would have to be made on a project-by-project basis, using EPA's default cleanup goal – residential use – in areas where many were advocating a less costly environmental preservation goal. For some parts of the Hanford Site, such as the 200-Area waste management facilities, a residential use goal would be technically infeasible or economically prohibitive, and could cause more environmental injury and human health risks than it would avoid.

In August 1992, DOE published a Notice of Intent to prepare an EIS on cleanup strategies to meet alternative objectives for contaminated areas of the Hanford Site. These alternatives included unrestricted uses (including residential and agricultural); uses with limitations, such as on groundwater use; and exclusive future use by DOE (for waste management and buffer zones).

Working Group Established Common Ground

EPA, Ecology, and DOE organized a process to involve stakeholders in developing a vision for the future uses of the Hanford Site. The agencies established the Hanford Future Site Uses Working Group, with representatives of labor, environmental, governmental, agricultural, economic development, and citizen interest groups, and of Tribal governments. The Working Group was charged with establishing the common ground from which priorities and preferences could be debated. In December 1992, the Working Group submitted its final report, *The Future for Hanford: Uses and Cleanup*, to DOE as EIS scoping input, thus framing the key elements of the EIS:

- dividing the Site into sub-areas,
- identifying reasonable alternative uses for each sub-area, and
- stating a set of group values to be respected in the land-use planning process.

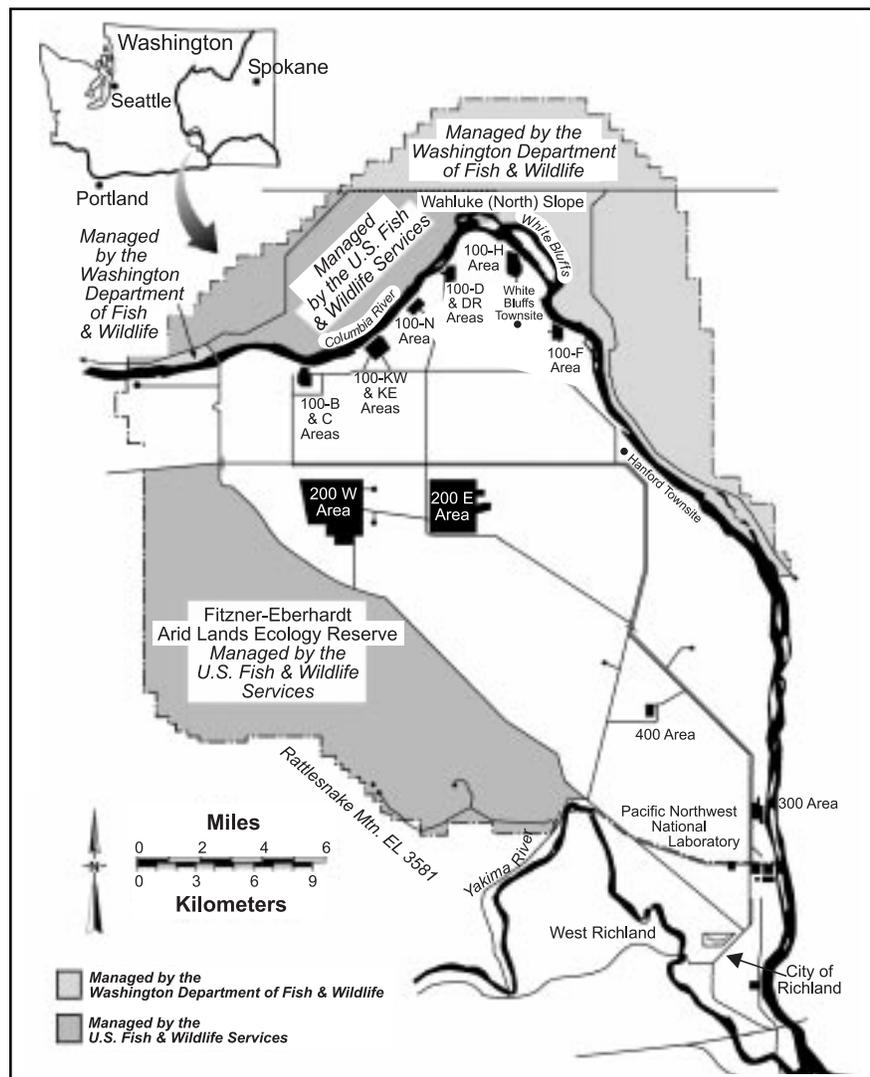
Building on the Working Group's report, DOE issued a Draft Hanford Remedial Action EIS (August 1996) that assessed the potential environmental impacts of attaining the cleanup conditions needed for alternative land uses and the impacts of the uses themselves.

Changed EIS Focus: Land Uses for Entire Site

Based on comments on the 1996 Draft EIS, DOE decided to refocus the EIS on a proposed Comprehensive Land-Use Plan because remediation decisions would be made by EPA and Ecology, as lead regulatory agencies, and DOE as an implementing agency.

With the scope of the EIS limited to land-use issues, DOE also decided to consider the entire Site (not just contaminated areas). Because of this change, DOE decided to prepare a Revised Draft EIS,

continued on next page



Hanford Comprehensive Land-Use Plan EIS (continued from previous page)

and also to expand stakeholder participation by involving agencies and Tribes with land-use interests.

Agencies and Tribes: Full NEPA Partners with Irreconcilable Interests

Nine parties responded to DOE's invitation to participate as either a cooperating agency or, in the case of the Tribal Nations, a consulting government: the Bureau of Land Management, the Bureau of Reclamation, and the U.S. Fish and Wildlife Service within the U.S. Department of the Interior; the City of Richland and Benton, Franklin, and Grant Counties; the Department of Environmental Restoration and Waste Management of the Nez Perce Tribe; and the Confederated Tribes of the Umatilla Indian Reservation. Together they reached substantial agreement on the land-use category definitions, a framework for the environmental analyses, and the Comprehensive Land-Use Plan's policies and implementing procedures.

However, some of the cooperating agencies and consulting Tribal governments strongly favored mutually incompatible future land uses, especially with regard to industrial and agricultural development versus environmental preservation. To provide fair voices for competing interests, cooperating agencies and consulting Tribes developed their own alternatives for consideration in the revised Draft EIS, using guidelines and a common outline to yield technically parallel information. The EIS presented these alternatives as written by these parties. Although this collaborative process required time, it ultimately saved time by enabling preparation of an EIS that adequately considered the full range of reasonable alternatives.

DOE and the cooperating agencies created six land-use alternatives, each consisting of a map that designated allowable uses for sub-areas within the Site. Except for



These elk are part of a herd that migrates through the Hanford Site. The EIS considered how to manage large portions of the Site to preserve biological resources.

Hanford's Unique Resources

- The Hanford Site contains a large tract of rare and unfragmented shrub-steppe habitat and rare animal and plant species.
- Along the north and east of the Hanford Site runs the last free flowing stretch of the Columbia River, known as the Hanford Reach, valued for its recreational uses and as prime salmon spawning habitat. The Reach's northern shore, known as the Wahluke Slope, rises in a chalk bluff formation whose stability has been threatened by agricultural irrigation.

No Action (continuing current land uses, land management processes, and intergovernmental relationships), each alternative represents one or more Tribe, Federal, or local agency preferred alternative.

DOE's preferred alternative in the Revised Draft EIS would consolidate waste management operations in the Central Plateau of the Site, allow industrial development in the eastern and southern portions of Hanford, increase recreational access to the Columbia River, expand an existing Saddle Mountain National Wildlife Refuge on the north side of the Site to include all of the Wahluke Slope, and allow limited commercial grazing on the Site.

The Department of the Interior agencies' alternative would increase Federal stewardship of Hanford's natural resources. The local governments' alternative would allow agricultural and grazing activities on the Hanford Site and increase industrial development. Two Tribal alternatives called for increasing traditional Tribal uses while preserving natural and cultural resources. The Tribes and DOE "agreed to disagree" on the interpretation of treaty rights in the interest of moving the EIS forward.

NEPA Process Enhanced Environmental Values

Public comments on the Revised Draft EIS primarily addressed environmental issues such as Hanford's unique shrub-steppe habitat, the importance of protecting the Hanford Reach to preserve salmon spawning sites, the proposed Congressional designation of the Hanford Reach as a Wild and Scenic River, and the historic significance of the Hanford Site's first nuclear reactor. Comments overwhelmingly favored a more environmentally protective alternative – with no cattle grazing, less gravel mining for remediation activities, and more preservation of wildlife and habitat than DOE's Revised Draft preferred alternative.

continued on page 10

Hanford Comprehensive Land-Use Plan EIS (continued from page 5)

Influenced by this public preference, DOE ultimately decided to increase environmental protection of parts of the Site. Accordingly, the Washington Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, and DOE modified their management agreements to allow expansion of the Saddle Mountain National Wildlife Refuge to the entire Wahluke Slope. The Record of Decision, which adopts the Comprehensive Land-Use Plan, “creates a roadmap for planning appropriate industrial development in the eastern and southern parts of Hanford while defining areas of the site where waste management will be handled,” said Assistant Secretary for Environmental Management Dr. Carolyn L. Huntoon.

Plan Includes Implementation Procedures

To help ensure that future decisions are consistent with the Comprehensive Land-Use Plan and that appropriate NEPA review takes place for future land-use proposals, the EIS includes an unusual chapter on implementation procedures. Under these procedures, adopted in the Record of Decision, proposals for new facilities and activities on the Site, whether from private or government proponents, will be evaluated by DOE’s Realty Officer and NEPA Compliance Officer, jointly with a Site Planning Advisory Board that includes representatives from the cooperating agencies and affected Tribal governments.

For more information on the Hanford Comprehensive Land-Use Plan EIS, contact Tom Ferns at thomas_w_ferns@rl.gov or call 509-372-0649. 

DOE Decides Disposition of Surplus Plutonium After Complex NEPA Process

On January 4, 2000, the Department announced its decision to dispose of up to 50 metric tons of surplus weapons-usable plutonium by immobilizing approximately one-third of it and using the remainder to fabricate mixed oxide (MOX) fuel, which will be irradiated in existing commercial nuclear reactors to make the plutonium inaccessible and unattractive for weapons use. Three new facilities will be constructed and operated at the Savannah River Site for pit disassembly, plutonium immobilization, and MOX fuel fabrication, the latter facility to be licensed by the U.S. Nuclear Regulatory Commission.

This major decision, the culmination of a complex NEPA process that began with a programmatic EIS initiated six years ago, was based on a tiered project-specific EIS that included a supplement to the draft EIS. (In a parallel procurement process, DOE also prepared an environmental critique and synopsis under Section 216 of the DOE NEPA regulations.)

In the project-specific Surplus Plutonium Disposition EIS (DOE/EIS-0283), DOE evaluated 15 action alternatives involving seven DOE sites and three commercial reactor sites. Planning and executing an appropriate NEPA compliance strategy required extensive discussions among numerous affected Program and Field Offices, and the Offices of General Counsel and NEPA Policy and Assistance.

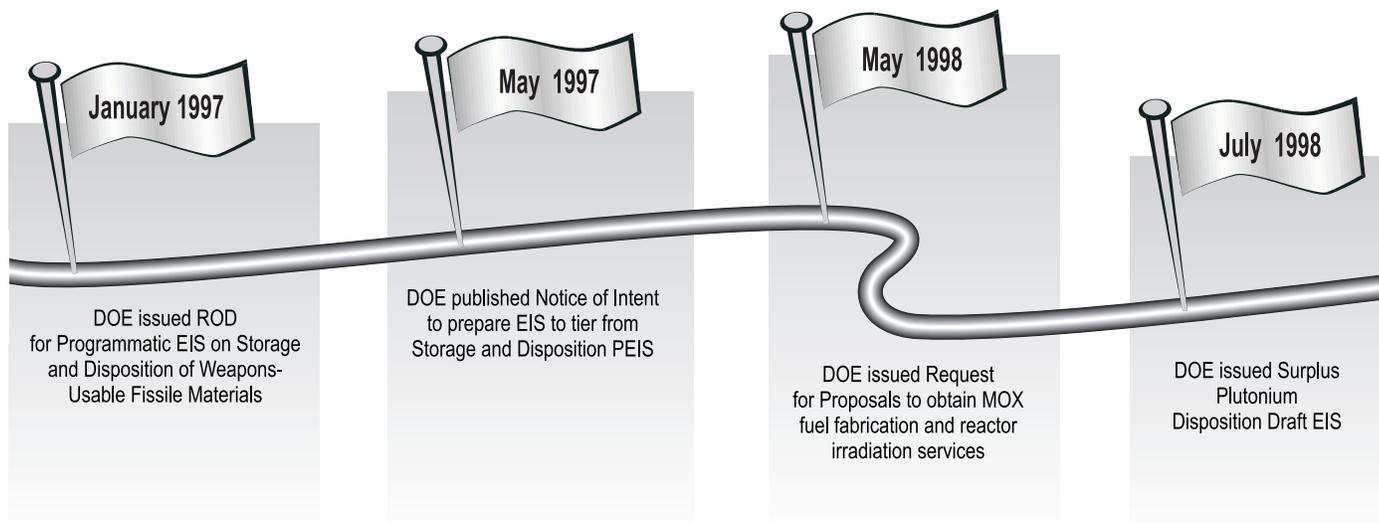
In preparing this EIS and the resulting Record of Decision (ROD) (65 FR 1608; January 11, 2000), the Office of Fissile Materials Disposition discovered that its EIS affected, or was affected by, many other DOE EISs and EAs. These interrelationships required close

coordination between that Office and other involved Program and Field Offices to ensure that the EIS used current information. According to Bert Stevenson, the Materials Disposition NEPA Compliance Officer and NEPA Document Manager, "Close coordination was especially important in preparing the cumulative impact analysis. A total of 35 NEPA documents contributed to it. We had to cope with several moving targets and tie them all together into a credible analysis. I was in almost daily contact with my counterparts in Defense Programs, Environmental Management, and the Field Offices."

Tiering and an Amended Programmatic ROD

The Surplus Plutonium Disposition EIS was tiered from the Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic EIS (DOE/EIS-0229). In the Programmatic ROD (62 FR 3014; January 21, 1997), DOE selected strategies for storage of weapons-usable fissile materials and disposition of surplus plutonium; the strategy included consolidating part of DOE's weapons-usable plutonium storage at the Savannah River Site. The Programmatic ROD made moving plutonium to the Savannah River Site for storage contingent on completing a new storage facility and selecting Savannah River as the site for immobilizing plutonium in the subsequent Surplus Plutonium Disposition ROD. However, when Environmental Management identified possible difficulties in meeting the closure schedule for the Rocky Flats Environmental Technology Site, DOE amended the programmatic ROD (63 FR 43386; August 13, 1998) to allow for earlier shipment of plutonium from Rocky Flats by upgrading existing storage facilities at the Savannah River Site.

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“216 Process” and a Supplemental Draft EIS

While preparing the Surplus Plutonium Disposition Draft EIS, DOE initiated a procurement consistent with DOE’s NEPA regulations at 10 CFR 1021.216 (the “216 process”) to obtain MOX fuel fabrication and reactor irradiation services under a privatization approach.

(Section 216 establishes an environmental review process within the procurement process for evaluating proposals. DOE uses the 216 process when it needs to meet significant acquisition objectives before the NEPA process can be completed, as often is inherent to a privatization approach. See *Lessons Learned Quarterly Report*, September 1997, page 8.)

The May 1998 Request for Proposals for this work defined limited activities that could be performed before a Surplus Plutonium Disposition EIS ROD. Per the 216 process, DOE requested that each offeror provide, as part of its proposal, information on facility design for MOX fuel fabrication and on commercial reactors proposed for irradiation services. This information was used in the procurement process to identify potential environmental impacts of the proposals and was documented in an environmental critique. In addition, an environmental synopsis, based on the environmental critique, was provided to the U.S. Environmental Protection Agency and made available to the public. In March 1999, DOE awarded a contract (contingent on DOE selecting the contractor’s approach after completing NEPA review) for fuel fabrication and reactor irradiation services. The award decision was based, in part, on the analysis documented in the environmental critique.

Meanwhile, DOE issued the Surplus Plutonium Disposition Draft EIS in July 1998, which generically assessed the potential environmental impacts of using MOX fuel in commercial nuclear reactors. In April 1999, DOE issued a Supplement to the Surplus Plutonium Disposition Draft EIS that incorporated the synopsis and analyzed the potential environmental impacts of using

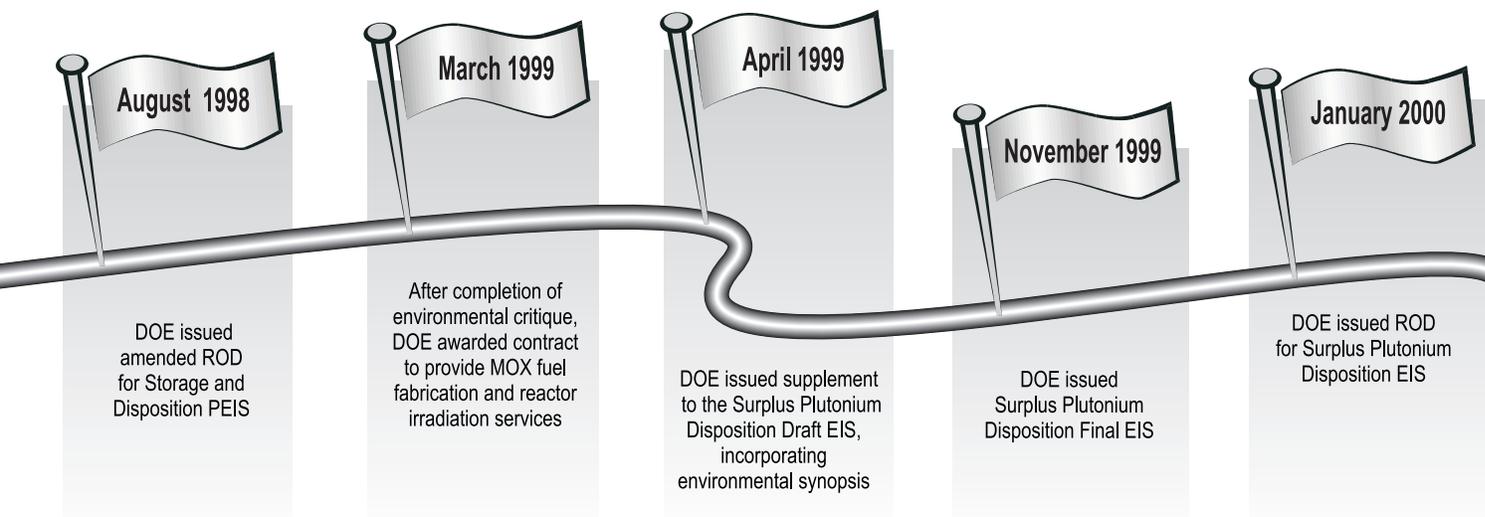
MOX fuel in the specific commercial reactors. “This approach helped save us some time in that we issued the Draft EIS, followed by a Supplement to the Draft EIS, a Final EIS, and a ROD,” said Mr. Stevenson.

Meeting Milestones Through Teamwork

As the Office of Fissile Materials Disposition was preparing the Final EIS and identifying Los Alamos National Laboratory as the preferred alternative for fabrication of test MOX fuel rods, Defense Programs raised questions about the Laboratory’s capability to support this activity in addition to its existing mission requirements. Materials Disposition, however, was concerned that delays in the Surplus Plutonium Disposition EIS would affect its overall program schedule, which included Environmental Management’s commitments to the State of Colorado regarding the shipment of Rocky Flats surplus plutonium to the Savannah River Site.

After much internal discussion, the matter was resolved by compromise: DOE selected Los Alamos National Laboratory for the manufacture of the test fuel rods, but deferred deciding which facility at the Laboratory will be used for the final stages of the test assembly work. Materials Disposition and Defense Programs established a process, which may involve further NEPA review, to resolve the longer-term issues.

Timely publication of the Surplus Plutonium Disposition Final EIS and ROD could not have been accomplished without extraordinary teamwork among many offices. Mr. Stevenson advises NEPA Document Managers to identify possible linkages to other proposals and NEPA reviews early in the internal scoping process: “When numerous sites and programs are involved in a NEPA review, coordinating data calls and project milestones is the only way to avoid potential conflicts and inefficiencies.” 



LESSONS LEARNED

U.S. DEPARTMENT OF ENERGY

QUARTERLY REPORT

June 1, 1999; Issue No. 19

For Second Quarter FY 1999

Consolidated Decision Ends “Tritium Trilogy” Tale

By: Jay Rose, *Office of Defense Programs*

When Secretary of Energy Bill Richardson signed the Consolidated Record of Decision for Tritium Supply and Recycling on May 6, 1999, he ended a three-year decision making process. This effort had been a high priority for the Office of Defense Programs (DP) since December 1995, when former Secretary O’Leary announced the Department’s decisions stemming from the Tritium Programmatic EIS (DOE/EIS-0161) – an announcement that set off a “chain reaction” that would rock DP’s world. The programmatic decision triggered the need for DP to prepare simultaneously three related, high-profile project EISs, which became known as the “Tritium Trilogy.”

The story begins with the Tritium Programmatic Record of Decision (60 FR 63878; December 12, 1995), in which DOE selected a “dual track” strategy to further evaluate the two most promising tritium supply alternatives: (1) irradiating tritium-producing rods in a commercial light water reactor, and (2) developing a new tritium production linear accelerator, identifying the Savannah River Site in South Carolina as the location for the accelerator, should DOE decide to build one. In addition, DOE decided to construct a new tritium extraction capability at Savannah River.

continued on page 4

The “Tritium Trilogy” (continued from page 1)

Three Coordinated EISs Tiered from the Programmatic EIS

Based on commitments in the Programmatic EIS Record of Decision, DP proceeded to tier three project-specific EISs: the “Tritium Trilogy” (text box, below).

While it is not unusual to tier a project-specific EIS from a Programmatic EIS, the tritium NEPA strategy was unusual because the three project-specific EISs shared more than just a similar schedule. What really “rocked” DP’s NEPA world was the degree of inter-relatedness among the three tiered EISs – they even shared alternatives:

- No Action for the Commercial Reactor EIS was the Proposed Action for the Accelerator EIS, and No Action for the Accelerator EIS was the Proposed Action for the Commercial Reactor EIS.
- The alternatives for a new tritium extraction capability at the Savannah River Site included not only those in the Tritium Extraction EIS, but also an alternative in the Accelerator EIS that incorporated tritium extraction capability within the accelerator facility.
- The tritium extraction facility was to be capable of extracting tritium not only from commercial reactor targets but also from the alternative accelerator production targets.

The relationships among these technically complicated proposed actions and alternatives would normally indicate that the proposals should be analyzed in a single EIS. After considerable thought, however, DOE decided that three narrowly focused – but carefully coordinated – EISs would be easier to write and to understand, and more useful to the public and DOE. The bottom line was to prepare three tiered, project-specific EISs with common goals: consistency, clarity, accuracy, legal adequacy, and complete analysis of potential impacts to affected resource areas.

Communicate Clearly

The most important factor in successful cooperation is full and open communication. Projects often suffer difficulties or delay because someone, somewhere, did not communicate fully and openly. In the case of the Tritium Trilogy, without such communication, the no action alternatives in the Commercial Reactor EIS and the Accelerator EIS could have been inconsistent, or the alternative of combining the tritium extraction capability with the accelerator facility might not have been analyzed.

Meet Early on “Framework” Issues

One of the best methods for resolving technical and management issues is to meet with the Environment, Safety and Health (EH) Office of NEPA Policy and Assistance, General Counsel (GC), and any other involved Program Offices well before preparing the Notice of Intent. This enables the EIS Document Manager to brief the “team” on the purpose and need and proposed actions, and for the team to design an appropriate NEPA strategy. This “internal scoping” process promotes common understandings among the participants and provides time to resolve issues before public scoping begins. The result is a smarter NEPA Document Manager, better informed EH and GC participants, more effective coordination with other involved offices, a carefully crafted NEPA strategy, a productive public scoping process, and ultimately, a better-informed public and decision maker.

Build Consistency into Your NEPA Documents

Once the interrelationships among the three EISs were recognized (working them out, of course, was an ongoing process), the documents could be prepared better. Communication was the key element in good management. Because both the Accelerator EIS and the Tritium Extraction EIS concerned the Savannah River Site, the two EIS preparation teams shared “affected

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The “Tritium Trilogy”

Final EIS for the Accelerator Production of Tritium at the Savannah River Site
(DOE/EIS-0270)

NEPA Document Manager: Richard Rustad, SR

Final EIS for the Construction and Operation of the Tritium Extraction Facility at the Savannah River Site
(DOE/EIS-0271)

NEPA Document Manager: John Knox, SR

Final EIS for the Production of Tritium in a Commercial Light Water Reactor
(DOE/EIS-0288)

NEPA Document Manager: Jay Rose, DP

The “Tritium Trilogy” (continued from previous page)

environment” data. This enabled each document team to use resources efficiently while providing accurate and consistent data. With respect to the Commercial Reactor EIS, coordination with the Tritium Extraction EIS preparation team was essential because the tritium extraction facility would extract tritium from the rods that were irradiated inside a commercial reactor. It would have been problematic if the Commercial Reactor EIS discussed irradiating 4,000 rods per year while the Tritium Extraction EIS discussed a capability to extract 2,000 rods per year. Likewise, it would be inconsistent for the Tritium Extraction EIS to evaluate operations beginning in 2002 if the commercial reactors were not expected to provide irradiated rods to the tritium extraction facility until 2005.

Make Complex Matters Clear

DOE’s complex and dynamic proposed actions can be quite challenging to understand and explain. But if our plans do not make sense to us, how can we expect the public to do any better?

To aid understanding, each of the project-specific tiered EISs contained a common preface to explain the relationships among the projects. Staff from the Savannah River Site, DP, the DOE NEPA Office, and GC participated in preparing this common preface.

After publishing the three draft EISs, DOE received many comments that applied to more than one of the EISs. Many public comments on the Commercial Reactor EIS and the Accelerator EIS overlapped on issues such as nonproliferation, cost, or technical capability. This crosscutting required close teamwork among the NEPA Document Managers to ensure that responses in both EISs were accurate and consistent. We did not want two EISs to give different answers to the same comment!

Finally, after issuing the three Final EISs, DOE published a consolidated Record of Decision (text box) to avoid

confusion that might have resulted from three separate RODs. While this, too, challenged our communication skills, the goal – to inform stakeholders and to direct those who must carry out the decisions – was worth it.

In conclusion – while the Tritium Trilogy may have rocked DP’s NEPA world – in the end the Department kept the beat. 

Consolidated Record of Decision for the Tritium Supply Program

DOE’s Consolidated Record of Decision for Tritium Supply and Recycling (64 FR 26369; May 14, 1999) describes DOE’s plans for a new domestic source for tritium to support the nuclear weapons stockpile. First, this Record of Decision documented Secretary Richardson’s December 22, 1998, announcement selecting the commercial light water reactor alternative as the primary tritium supply, and designating an accelerator system at the Savannah River Site as the backup tritium supply source (although the decision did not authorize accelerator construction). Further:

- The Tennessee Valley Authority’s Watts Bar Unit 1, Sequoyah Unit 1, and Sequoyah Unit 2 reactors are the specific commercial light water reactors that will provide irradiation services needed to produce tritium.
- The H-Area within the Savannah River Site will be the location for a new tritium extraction facility.
- DOE selected specific technologies and a specific location at the Savannah River Site for the accelerator production of tritium, should an accelerator be needed.

LESSONS LEARNED

U.S. DEPARTMENT OF ENERGY

QUARTERLY REPORT

June 1, 1999; Issue No. 19

For Second Quarter FY 1999



Mexican spotted owls are among the protected species at Los Alamos National Laboratory.

NEPA and Habitat Management Plan: Environmental Synergy

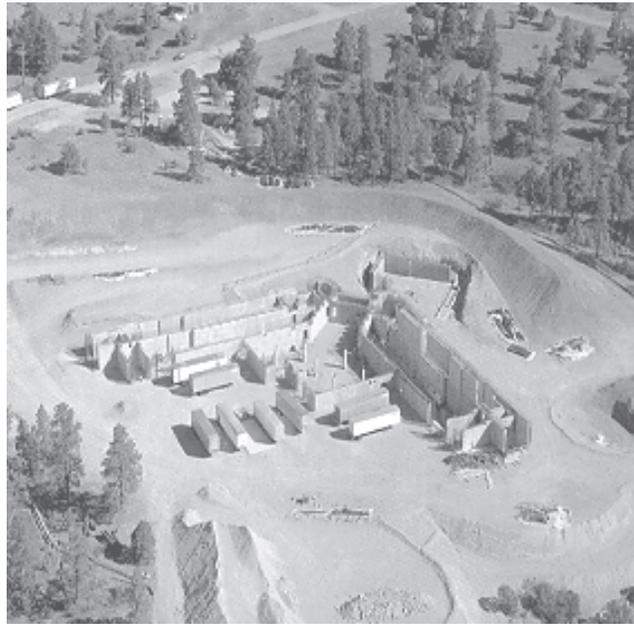
By: Elizabeth Withers, NEPA Compliance Officer, Los Alamos Area Office, with John Stetson, Pacific Western Technologies, Ltd.

On the day DOE issued the Draft EIS for the Dual Axis Radiographic Hydrodynamic Test (DARHT) Facility at Los Alamos National Laboratory (LANL), LANL biologists discovered a nesting pair of Mexican spotted owls (*Strix occidentalis lucida*) – which had only recently been listed as threatened – in the canyons directly below the proposed site. Today, this nest site, at the edge of a major explosives testing facility, is one of the most successful breeding nests of spotted owls in the entire Jemez Mountain range.

continued on page 6

LANL Habitat Plan (continued from page 1)

Looking back over the DARHT project's history, we can discern many NEPA lessons learned. (See, for example, the case study on DARHT in the *Lessons Learned Quarterly Report*, December 1995, page 12, and the Legal Update in June 1996, page 8.) But while the DOE NEPA process for the DARHT facility EIS ended – at least in a technical sense – in January 1996 with the issuance of the Mitigation Action Plan, the environmental stewardship and efficiency initiated by this NEPA process continue.



The nesting site (not shown) is at the edge of the Dual Axis Radiographic Hydrodynamic Test (DARHT) Facility.

NEPA Process Leads to Site-wide Habitat Management Plan

LANL sits atop the Pajarito Plateau at an elevation of about 7,000 feet. Erosion has produced a series of finger-like mesas separated by deeply incised canyons. The remote setting, combined with limited public access, made the site suitable for its original defense-related mission and also preserved threatened and endangered species habitats.

After the discovery of the Mexican spotted owls in 1995, DOE and the U.S. Fish and Wildlife Service (USFWS) agreed through the Endangered Species Act consultation process on specific mitigation measures for management of threatened and endangered species habitat. The Record of Decision for the DARHT Facility EIS (60 FR 53588; October 10, 1995) documents these commitments. The Mitigation Action Plan, which followed from the Record of Decision, specifies DOE's plans for implementing these measures.

In accordance with the Record of Decision and the Mitigation Action Plan, DOE and LANL in March 1996

began to develop a site-wide management plan for the long-term protection of LANL's threatened and endangered species. (LANL also contains habitat for bald eagles, peregrine falcons, southwestern willow flycatchers, and several state-listed species.) Under the direction of LANL Project Manager Teralene Foxx, LANL's Ecology Group completed the plan in October 1998 – slightly under the budget of \$3 million and within the timeframe of three years. The plan sets goals and objectives, defines species-specific "Areas of Environmental Interest" –

areas within LANL that are being protected because of their significance to biological and other resources (map, next page) – and defines levels of monitoring. According to the LANL group leader, Diana Webb, it is the first comprehensive, "fence-to-fence" management plan to consider all threatened and endangered species at a large DOE site. An important milestone was reached in February 1999 when the USFWS concurred with the plan. "Having this inter-agency agreement in hand means that we no longer have to address Endangered Species Act compliance under the piecemeal, case-by-case approach that we formerly used," Ms. Webb said.

Benefits Prove Long-lasting

The Habitat Management Plan has already saved time and money (box, next page). Previously, LANL prepared about 10 to 12 Biological Assessments per year at costs of \$30,000 to \$50,000 each. USFWS concurrence required three to six months. With the Habitat Management Plan now in hand, only large projects will require Biological Assessments – and these will have a substantial baseline on which to build. The Geographic Information System

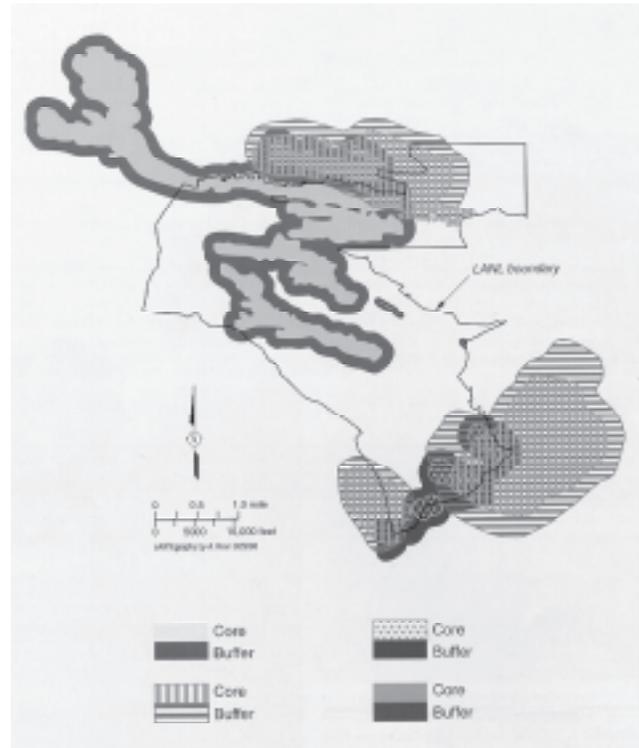
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LANL Habitat Plan (continued from previous page)

database and mapping system used in this effort are available for future studies. Already two major EISs – the LANL Site-wide (DOE/EIS-0238, January 1999) and the Conveyance and Transfer of Certain Land Tracts at LANL (DOE/EIS-0293, Draft, February 1999) – have integrated this information into their Ecological Resources analysis. As a result of the Habitat Management Plan process, coordination between DOE and USFWS has been streamlined.

The NEPA process for the DARHT facility not only analyzed impacts to valuable biological resources, but also provided a legacy of mitigation measures developed through inter-agency coordination. We now have a better understanding of threatened and endangered species at LANL. More importantly, the site-wide management program for protection of biological resources will provide important information for decision making regarding future proposed actions.

For more information about the NEPA process for the DARHT facility, contact Elizabeth Withers at ewithers@doe.lanl.gov or phone 505-667-8690. For copies of the Threatened and Endangered Habitat Management Plan Overview and a compact disc of LANL's reports (box, below), or for any related questions, contact Terlene Foxx at foxxt@lanl.gov or phone 505-667-3024. 



Buffer areas protect core "Areas of Environmental Interest" within Los Alamos National Laboratory.

Habitat Management Plan Promotes Efficiency in NEPA Reviews

The Habitat Management Plan has proven beneficial to NEPA reviews at LANL, including EAs and categorical exclusions. For an ongoing EA on siting a new power line to the Laboratory, for example, information in the plan enabled the Laboratory Utilities Division to avoid critical habitats from the beginning, thus avoiding potential redesign costs and delays. These avoidances, although not directly quantifiable, are nevertheless important benefits.

Compact Disc Earns Award

LANL published the 30 separate reports related to the Habitat Management Plan (more than 1,850 pages) on compact disc, saving \$40,000. Some 254,000 sheets of paper – 25 trees – were spared, as well as the associated printing chemicals. For this innovation, LANL's Environmental Management Division presented the LANL Ecology Group with a pollution prevention award on Earth Day 1999.

In addition, the team received Certificates of Appreciation for contributing to DOE's Pollution Prevention Program from Daniel W. Reicher, Assistant Secretary for Energy Efficiency and Renewable Energy.

Partnering Facilitates SPR Pipeline EA

By: Hal Delaplane, NEPA Contact, Fossil Energy, Strategic Petroleum Reserve Program Office

In 23 years of developing the Strategic Petroleum Reserve (SPR), DOE has done many NEPA reviews of pipeline projects. These projects resulted in a network of 255 miles of crude oil pipelines, a marine terminal, and many miles of raw water and brine disposal pipelines in coastal Louisiana and Texas. Last year, DOE was involved in a private sector proposal for what probably would have been just another pipeline construction project – except that it precipitated some unusual NEPA process considerations concerning mitigation of adverse impacts.

While considering granting a lease of facilities that would directly result in a private pipeline construction project, DOE sought to facilitate the project while ensuring that significant impacts would not result. The solution was to integrate its NEPA process with the U.S. Army Corps of Engineers Section 404 permit process, in close cooperation with the host State and private applicant. This enabled DOE to accept a mitigation action plan that the applicant had negotiated with the State. Once the State indicated approval of the plan, in rapid succession DOE approved its EA and issued a mitigated Finding of No Significant Impact (FONSI), and the Corps of Engineers adopted DOE's EA and issued a Section 404 permit that incorporated the mitigation commitments as permit conditions.

Government-Industry Partnership

To cut operating costs and generate revenue, DOE is commercializing its underused crude oil distribution facilities through government-industry arrangements for shared use. In 1997, after competitive bidding, DOE awarded a short-term lease of its Bayou Choctaw Pipeline in Louisiana to Shell Pipe Line Corporation after categorically excluding the action from further NEPA review. This pipeline, which DOE built in 1978, connects DOE's St. James Marine Terminal, 63 miles up the Mississippi River from New Orleans, to the SPR Bayou Choctaw Facility, an underground salt dome petroleum storage facility 37 miles to the northwest of the marine terminal.

Initially, Shell Pipe Line Corporation (renamed Equilon Enterprises LLC in 1998) anticipated connecting the Bayou Choctaw Pipeline with one or more third-party pipelines to provide commercial pipeline capability to Baton Rouge refineries located about 16 miles north of the SPR Bayou Choctaw Facility. This plan fell through, however, and Equilon subsequently proposed to construct a new underground crude oil pipeline from the Bayou Choctaw Facility to the Baton Rouge market: a 16-mile pipeline, 24 inches in diameter, to carry 100,000 barrels of

A Section 404 Primer

Section 404 of the Federal Clean Water Act establishes a program to regulate the discharge of dredged and fill material into the waters of the United States, including wetlands. The U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency jointly administer the program. The basic premise of the program is that no discharge of dredged or fill material can be permitted if a less damaging practicable alternative exists. Regulated activities are controlled through a permit process. For projects not likely to have potentially significant impacts, the Corps of Engineers may approve an application under a *general permit*. These are defined on a nationwide, regional, or state basis for particular categories of activities to expedite the permitting process. If a proposed activity is not covered by a general permit, an *individual permit* is required; usually, these are required for projects with potentially significant impacts.

oil per day. To allow recovery of the required capital investment, Equilon asked DOE to restructure its annual lease to a 10-year lease. Because DOE's long-term leasing of the existing pipeline would result in the private party construction of a new pipeline, this new proposed action triggered the need for additional environmental review under NEPA.

Interagency Coordination Was Key

In addition to having numerous water crossings (including crossing the 300-foot wide Intracoastal Waterway) that would require a Corps of Engineers Section 404 individual permit (Primer, above), the project as proposed would unavoidably involve floodplains and bottomland hardwoods. Bottomland hardwoods, a swamp forest ecosystem, are becoming scarce and fragmented regionally and nationally as a result of construction of highways, pipelines, and powerlines.

DOE and Equilon discussed these concerns with State and Federal regulators and consulting agencies, first with the Corps of Engineers and Louisiana Department of Wildlife and Fisheries and then with the U.S. Fish and Wildlife Service. These discussions indicated that bottomland hardwoods removal would require compensatory wetlands mitigation. While an EA typically would be the appropriate level of NEPA review for a pipeline of this scale, the need for mitigation — over which DOE would not have control — could have precluded DOE's issuing a FONSI.

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1978 construction of a DOE crude oil pipeline in bottomland hardwoods/wetlands near the SPR Bayou Choctaw Facility (DOE file photo).

Effective Integration of NEPA and Wetlands Protection Processes

Because a Section 404 permit can contain enforceable mitigation commitments, it made sense to fully integrate the DOE NEPA process with the Section 404 permit process. DOE and Equilon obtained the early assistance of the Louisiana Department of Wildlife and Fisheries and the U.S. Fish and Wildlife Service in identifying a preferred right-of-way for the new pipeline and developing a compensatory wetlands mitigation plan. DOE and the Corps of Engineers integrated their public involvement procedures and merged their respective NEPA and permit notification lists, effectively providing more comprehensive information to a larger set of stakeholders.

After DOE distributed an EA for pre-approval review and responded to State comments, Equilon quickly obtained approvals from the Louisiana Department of Wildlife and Fisheries and the U.S. Fish and Wildlife Service for the wetlands mitigation plan. The Corps of Engineers then added the mitigation plan to its permit terms and conditions. Based on the mitigation commitments, DOE issued the EA and a mitigated FONSI on September 1, 1998 (Environmental Assessment of Bayou Choctaw Pipeline Extension to Placid Refinery, Iberville and West Baton Rouge Parishes, Louisiana, DOE/EA-1251). The Corps of Engineers then adopted DOE's EA and issued the Section 404 permit.

Mitigation Will Restore Environment

Construction began in September 1998 and ended in January 1999. Through careful planning, Equilon minimized tree removal so that only 37 acres of compensatory wetlands are required, far less than the maximum of 86 acres analyzed in the EA. The wetlands mitigation work will be accomplished near the right-of-way by restoring agricultural land (currently in sugarcane) as close as possible to its original state by planting cypress and other bottomland hardwood species. The project proponents are required to restore the new pipeline corridor to preconstruction elevations, so the buried pipeline will not interfere with floodplain functions and values.

For more information on mitigated FONSI's, see questions 39 and 40 in "Forty Most Asked Questions Concerning CEQ's Regulations" (46 FR 18026; March 23, 1981) amended, and 10 CFR 1021.322(b) and (e), and 1021.331(b). For more information on this project or the SPR Program, contact Hal Delaplane at hal.delaplane@hq.doe.gov or phone 202-586-4730. 

Selected Project Chronology

February 1998

- ◆ DOE made NEPA determination and began EA preparation

March 1998

- ◆ Equilon submitted Section 404 permit application to Corps of Engineers
- ◆ DOE and Corps of Engineers agreed to integrate NEPA and permit processes

April 1998

- ◆ Corps of Engineers issued public notice of Section 404 permit application

May 1998

- ◆ U.S. Fish and Wildlife Service responded to Corps of Engineers public notice
- ◆ DOE published notice of floodplain and wetlands involvement

June 1998

- ◆ U.S. Fish and Wildlife Service responded to DOE floodplain/wetland notice

- ◆ Equilon obtained State approval of right-of-way and completed Section 404 permit application

July 1998

- ◆ DOE issued EA for pre-approval review
- ◆ U.S. Fish and Wildlife Service commented on the EA

August 1998

- ◆ Louisiana Departments of Environmental Quality and Wildlife and Fisheries commented on EA
- ◆ Louisiana Department of Wildlife and Fisheries approved compensatory wetland mitigation action plan; Corps of Engineers attached plan to permit application

September 1998

- ◆ DOE approved EA and issued mitigated FONSI
- ◆ Corps of Engineers adopted EA and issued Section 404 permit
- ◆ Applicant began construction

(additional concurrent State activities are not listed)

LESSONS LEARNED

December 1, 1997, Issue No. 13

For Fourth Quarter FY 1997

NEPA Review Adds Value to Proposed Sale of Naval Petroleum Reserve

DOE recently completed a Supplemental EIS/Program Environmental Impact Report (SEIS/PEIR) on the sale of Naval Petroleum Reserve (NPR) No. 1 (Elk Hills), a Federally owned oil field near Bakersfield, California (*map, next page*). Closing the sale, scheduled for February 2, 1998, is conditioned on completing several statutory requirements, including the NEPA process, antitrust review, and a 31-day Congressional review.

The NEPA review was an important step leading to the prospective agreement to sell NPR-1 to Occidental Petroleum Corporation for \$3.65 billion—the largest Federal divestiture in U.S. history. Based on the Supplemental EIS, the Office of Fossil Energy will be able to incorporate protection for biological and cultural resources into its decision making.

After the October 6, 1997, announcement of DOE's agreement to sell NPR-1 to Occidental, DOE Assistant Secretary for Fossil Energy Patricia Fry Godley observed: "The NEPA process significantly contributed to the success of the NPR sale process. The prospective new owner will implement mitigation measures, in particular those concerning biological and cultural resources, similar to DOE's past practices. In addition, we involved Federal, State and local government entities as well as the public and private sector efficiently and meaningfully."

Tony Como, the NEPA Document Manager, noted that "the highly interactive EIS team met the challenge of producing a high quality document under a very ambitious schedule."



The endangered San Joaquin Kit Fox would continue to be protected after sale of NPR-1. (Photo courtesy of California Department of Fish and Game.)

Combined Federal and State Environmental Review

DOE and the Kern County Department of Planning jointly prepared the SEIS/PEIR to meet both NEPA and California Environmental Quality Act (CEQA) requirements. The two agencies held joint public hearings on the Draft SEIS/PEIR. The combined process provided an effective framework for close and timely coordination among DOE and State and local agencies.

Potential Effects Warranted Mitigation

NPR-1 serves as important habitat for a variety of threatened and endangered species, including the endangered San Joaquin Kit Fox. The NEPA/CEQA process alerted Federal, State, and county agencies and the public to how increased commercial development of the

continued on page 2

NPR-1 (continued)

oil and gas field could have significant impacts on threatened and endangered species and other biological resources. In addition, the optional provisions of the sales contract sensitized the oil and gas companies to the need for mitigation of significant environmental impacts to biological resources by providing for the transfer of an existing permit issued under Section 7 of the Endangered Species Act (ESA). Section 7 provisions ordinarily do not apply to nongovernmental entities, but the transfer was specifically allowed by the Act that authorized the sale. The advantage of a permit transfer is that a successful bidder would have a defined set of agreed-upon mitigation measures for immediate compliance with ESA, with time after the sale to obtain a commercial permit under ESA Section 10. Under the proposed sale agreement,



*Naval Petroleum Reserve Fields in California.
NPR-1 is located 35 miles southwest of Bakersfield.*

Occidental Petroleum will assume DOE's existing Section 7 permit and agree to the same mitigation measures that DOE has been required to implement at the site.

The SEIS/PEIR also focused public attention on potential impacts to cultural resources—specifically two historic oil wells and several prehistoric sites of particular concern to Native Americans. DOE and Kern County are completing consultations and preparing a programmatic agreement with the California State Historic Preservation Officer and the Advisory Council on Historic Preservation concerning possible mitigation activities. Other issues addressed in the SEIS/PEIR include the potential impacts of increased oil and gas operations upon air and water quality.

Congressional Mandate Presents NEPA Challenges

The NPR-1 proposed sale demonstrates that Congressionally mandated divestiture does not diminish DOE's responsibility under NEPA. The schedule for the proposed sale, however, posed challenges to DOE to ensure a full and timely NEPA review while managing the sales process to maximize the financial return to the government. DOE needed to be responsive to a schedule affected by market timing considerations, while striving to meet the Congressional deadline to sell NPR-1 by February 10, 1998. The NEPA review process proved to be a partner in a successful sale process.

For more information, contact Tony Como, Office of Fossil Energy, at anthony.como@hq.doe.gov, phone (202) 586-5935, or fax (202) 287-5736. 



National Environmental Policy Act LESSONS LEARNED

U.S. Department of Energy

Quarterly Report

March 1, 1996

For 1st Quarter FY 1996

Inside *LESSONS LEARNED*

Welcome to the newly-revised Quarterly Report of Lessons Learned in the NEPA process. In response to reader suggestions, we have expanded the scope of the report to provide a wider variety of NEPA-related information, and enhanced the format for better clarity and overall readability. This Quarterly Report includes:

- NEPA lessons learned at the Hanford Site - Page 1
- Mini-guidance on the preparation of EIS summaries, properly eliminating alternatives and impacts from detailed analysis, application of DOE NEPA regulations to procurement, and NEPA questions and answers - Pages 3-6
- Updates on the proposed amendments to DOE's NEPA regulations, NEPA Contracting Reform Guidance and an upcoming workshop, the Federal Environmental Quality Awards program, and a Lessons Learned alert - Page 7
- First quarter FY 1996 Lessons Learned Questionnaire results, including EIS and EA cost and time reports, and the cumulative median cost of EAs - Pages 8-15

Please let us know what you think of the format and content of this report by completing the evaluation form on page 17 and returning it to us.

Carol Sorption

Director
Office of NEPA Policy and Assistance

A NEPA SUCCESS STORY: Environmental Impact Statement for the Safe Interim Storage of Hanford Tank Wastes

A key stakeholder in the Pacific Northwest has praised the DOE NEPA staff for "a job well done" in the preparation of the environmental impact statement for the Safe Interim Storage of Hanford Tank Wastes.

In a recent letter from the Confederated Tribes of the Umatilla Indian Reservation to John Wagoner, Manager, Richland Operations Office, and Mary Riveland, Director, Washington State Department of Ecology (Ecology), the tribal organization commended the management of the Hanford tanks EIS process as an "excellent example" for others to follow.

The EIS process differed from typical DOE NEPA planning processes, according to the tribal program manager, J.R. Wilkinson, in at least two regards: the EIS staff "actually changed the scope of their proposed project in response to criticism" from the public, and the EIS staff "made concrete, enforceable commitments to specific mitigation actions" in the Record of Decision.

The enthusiastic stakeholder appreciation of the NEPA process for Safe Interim Storage of Hanford Tank Wastes is one feature of this successful case history, which provides important lessons on NEPA's influence on decision-making, the benefits of full and open stakeholder participation, and practical aspects of managing the NEPA process. Moreover, as a result of reevaluations of the project in the course of the NEPA process, the Department has decided not to construct six new waste tanks, resulting in a savings of \$435 million.

Carolyn Haass of the DOE Richland Operations Office and Geoff Tallent of Ecology managed a combined NEPA/State Environmental Policy Act (SEPA) process in coordination with Paul Dunigan, Richland's NEPA Compliance Officer.



As a result of analyses conducted during the NEPA process, DOE decided not to construct six new high-level waste tanks similar to these shown under construction at Hanford during the 1970's, saving over \$400 million.

A NEPA success story (Continued)

Their staffs met an aggressive schedule for preparing a Final EIS, Record of Decision, and Mitigation Action Plan. They also addressed tribal and other stakeholder concerns, which resulted in DOE changing its preferred alternative in the Final EIS and making commitments in the Record of Decision to enforceable mitigation strategies.

NEPA's Impact on Decision Making

When the Draft EIS was issued in July 1994, the preferred alternative was to construct up to six new high-level waste storage tanks. Political support for the alternative was strong, as speedy completion of the EIS would meet Tri-Party (DOE, Environmental Protection Agency, State of Washington) Agreement milestones, and the socioeconomic impacts of the \$435 million proposal looked very beneficial. Dr. Don Alexander was the Richland NEPA Document Manager at that time, and, faced with public skepticism of a predetermined outcome and an analysis that did not support the preferred alternative, he and Ms. Haass championed a change in course. Through Dr. Alexander's direction, reevaluations of waste volume projections and management practices led DOE to abandon its preferred alternative and pursue renegotiation of the Tri-Party Agreement. This change would save the Department hundreds of millions of dollars in construction and operations costs. Ms. Haass and Robert Lober, Project Manager, then developed the new preferred alternative for safe tank waste management, consisting of a replacement cross-site transfer system with continued use of mixer pumps in the hydrogen-generating tank SY-101. This became the preferred alternative presented in the Final EIS and chosen in the Record of Decision.

Mitigation Commitments Reassure Stakeholders

State and Federal fish and wildlife agencies both acknowledged Richland Operations Office's cooperation in developing an effective Mitigation Action Plan. "The U.S. Fish and Wildlife Service considers the development of this plan to be a significant positive indication of DOE's increasing awareness and stewardship of the invaluable natural resources it manages at Hanford. . . . We commend the Safe Interim Storage project staff for their coordination efforts with natural resource agencies since the early phases of the project, and their responsiveness to our suggestions," wrote Philip Laumeyer, Field Supervisor.

Tribal stakeholders, too, were reassured by the mitigation commitments. Mr. Wilkinson wrote that the staff "deserve recognition for demonstrating the integrity to make concrete, satisfactory commitments to mitigation in their NEPA Record of Decision."



EIS Manager Carolyn Haass confers with J.R. Wilkinson, Program Manager, Confederated Tribes of the Umatilla Indian Reservation, regarding the Safe Interim Storage Environmental Impact Statement.

Process Streamlining and Contracting Efficiency

The DOE and Ecology EIS Document Managers exploited opportunities to reduce process overlaps, saving both time and money:

- Scoping meetings and Notices of Intent were combined for the Safe Interim Storage and the Tank Waste Remediation System EISs.
- DOE and Ecology agreed to co-prepare a single EIS for Safe Interim Storage, satisfying both the NEPA and SEPA processes.
- This EIS project established a Hanford resource library that will support the efficient preparation of future Hanford EISs. Preparers of the Hanford Plutonium Finishing Plant EIS are using this resource to reduce research costs and preparation time.

Cost and time savings were attributed to the use of a general support services contractor, with the following advantages:

- The support services contractor had been selected through a competitive process before the start of this EIS, thus avoiding the delay and costs of a separate procurement process.
- The NEPA support contractor did not have a steep learning curve because of its familiarity with the Hanford Site and its contractors, its expertise in NEPA, and its access to qualified local and national resources.