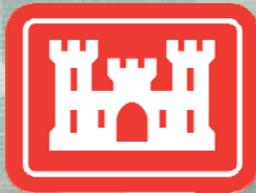


Customer Funding Progress Report

Jamie G. James, P.E.
Section 212 Program Manager
13 November 2013



US Army Corps of Engineers
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Section 212 Program Update

- **Program Management**
- **Program and Project Overview**
- **Master Plan Revision**
- **Planning Document**
- **Section 212 Path Forward**
- **O&M Perspectives – David Mistakovich**



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Program Management

- **LRN Program Management Team**

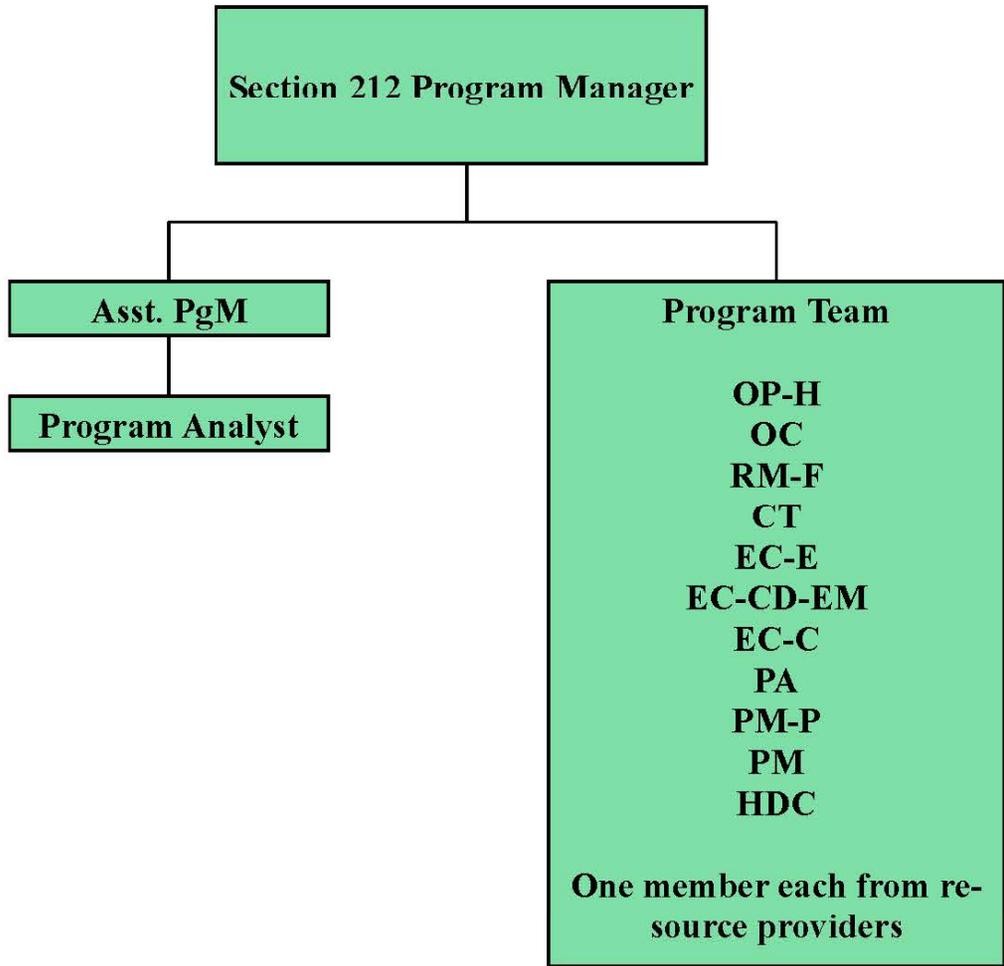
- Led by the Section 212 PgM, supports LRN Hydropower
- LRN Resource Providers and HDC
- Broad input to project implementation

- **Project Initiation**

- Begins with Chief, OP-H and Section 212 PgM
- LRN Program Management Team provides input
- Ensures early engagement of resource providers
- Enhances workload integration across the organization



Section 212 Program Management Team



Program and Projects Overview

Revenue to Date

Revenue Period	Cumulative Revenue	Revenue L-T Sub-Agreement #1	Revenue L-T Sub-Agreement #2	Revenue L-T Sub-Agreement #3	Revenue L-T Sub-Agreement #4
Cumulative to Sep 30, 2013	\$127,957,527				
Legacy Total	\$45,000,000				
2004 to 2009	\$45,000,000				
Cumulative L-T MOA	\$82,957,527	\$25,000,000	\$25,000,000	\$25,000,000	\$7,957,526



Program and Projects Overview

- Annual Report is due 30 November, draft in progress
- Master Plan draft revision is in review
- Draft hydropower rehab planning document outline is ready for review
- Ballot 3
 - Collects funds for Center Hill into a single work item (\$74.9M)
 - Approved by Customers, routed in USACE to DCW for signature
- MOU with HDC (Mar 2013)
 - Fosters the collaborative relationship
 - First meeting 29-30 Oct; next meeting Mar 2014



Program and Projects Overview

Group	Date*	Location	Topic
PRC	28 January 14	Teleconference	SA#5
LRN/HDC	March 2014	LRN	Upcoming Work
PRC	29 April 14	Teleconference	TBD
PRC	22 July 2014	Teleconference	TBD
LRN/HDC	October 2014	LRN	Work Progress
PRC	21 October 2014	Teleconference	TBD
Team Cumberland	2014	TBD	Annual Meeting

*Dates tentative



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Program and Projects Overview

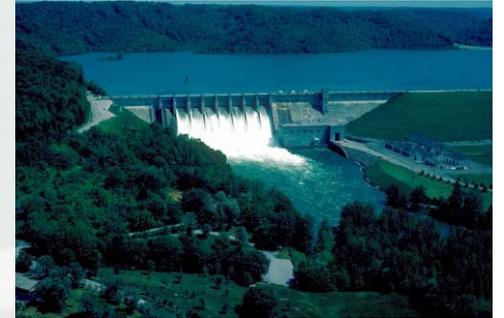
•Old Hickory Powerhouse Crane & Barkley Powerhouse Crane

- Old Hickory – as-built drawings at 95%
- Barkley – re-evaluation in progress



•Center Hill Hydropower Rehabilitation

- Solicitation announced, proposals due 25 Nov
- Source Selection Board convenes in December



•Barkley Unit 1 Rewind

- Substantially complete 07 Nov, \$8.7M expended through FY13
- Return to scheduled generation 18 Nov
- Special Field Test – Spring 2014



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Program and Projects Overview

- **System-Wide Generator Circuit Breaker Replacement**

- Substantially complete, as-built drawings finished for 5 of 9 plants, \$7.3M expended through FY13.

- **Old Hickory Turbine Generator Rehabilitation**

- Planning document outline configured by LRN and HDC
- Unit 4 considerations
 - HDC recommended tests
- LRN and HDC formulating a recommended path forward



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Program and Projects Overview

- **Center Hill Penstock and Water Passages PED**

- Design is substantially complete, to be implemented after rehab, expended \$63K of \$201K budgeted

- **System-Wide Turbine Governors PED**

- Rehabilitate Woodward governors

- Planning complete, Plans and Specifications complete for CEN, expended \$280K of \$1.18M budgeted

- **System-Wide Main Power Transformers Planning**

- Planning report complete, \$241K expended of \$278K budgeted



Program and Projects Overview

- **Laurel Unit 1 T- G Emergency Assessment**

- Vibration problems - investigated in a detailed inspection of the turbine and generator, \$203K expended of \$205K budgeted
- Repair work will be requested under work item LAU02R

- **System-Wide Switchyard Planning**

- Planning report is complete. Implementation work items to follow. \$112K expended of \$135K budgeted.

- **Wolf Creek Evacuation/Water Depression Controls**

- 100% Plans and specifications, \$9.2K expended of \$190K budgeted



Program and Projects Overview

- **Barkley Turbine Governors – Unit 3 Kaplan Head**
 - Work will commence now that head gates are available
 - HDC and LRN to provide on-site testing and remediation
- **Wolf Creek Thrust Bearing Pressure Lift System – Units 1, 2, 3 & 5**
 - 50% plans and specifications
 - Acquisition strategy to be approved, TVA may provide supplies and services under the Economy Act, \$3.4K expended of \$2.9M budgeted



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Program and Projects Overview

- **System-Wide Station Service Power Systems**

- HDC site visits conducted in October (OLD, CEN, JPP)
- Draft report in progress; future site visits scheduled.

- **Wolf Creek Unwatering Pumps**

- Contract awarded to JB&S, \$378K expended of \$435K budgeted

- **CHE & COR Intake Draft Tube Aux. Equipment**

- Initial inspection revealed broader scope of work
- Plan to propose HDC Phase I inspection of equipment

- **Wolf Creek Penstock Water Passages PED**

- Site inspection complete, BUREC report complete
- Plans and specifications in progress



Program and Projects Overview

- **Projects in early implementation:**
 - **Barkley MV Cables and Busses Planning**
 - **DC Systems Planning**
 - **Excitation Equipment Planning**



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Master Plan Revision

- **Direction of the Revision**

- Updates the work item list and order
- Revises the program management

- **HDC is reviewing the Work Item list**

- **Following HDC feedback, LRN senior mgt will review**

- **Revised Master Plan will be provided to Customers at the end of December**

- **Working for adoption by April 2014**



Planning Document

- **Developed by LRN and HDC**
- **Goals**
 - **Due diligence in decision process**
 - **Efficient and effective use of available resources during planning and implementation of hydropower rehabilitation**
 - **Consideration of authorized project purposes**
- **Provides appropriate depth of analysis**
- **Does not entail time and expense of an MRER**



Planning Document

- **Plan Formulation and Evaluation**

- **Measure Identification**

- **Base power output of plant**

- **Alternatives (alternate powerhouse configurations)**

- **Four-step process**

- **First Step: Different powerhouse configurations, with all units being the same size**

- **Second Step: Possibility of having 'low flow' units**

- **Third Step: Possibility of having fix-blade units**

- **Fourth Step: Optional step to evaluate optimizations of alternatives developed in steps One through Three**



Planning Document

- Evaluation of the balance of the powertrain equipment needed to support the output
 - Generator
 - Governor
 - Main Unit Buss
 - Main Unit Breakers
 - Generator Step-Up Transformer
 - Power Cabling from GSU to switchyard
 - Exciter
- Measure Benefits
- Economic Analysis
- Operation and Maintenance Considerations
- Operation Flexibility Considerations
- Impacts to Other Authorized Purposes



Path Forward

- Annual Report submitted by 30 Nov;
- Planning document outline provided to Customers in Dec;
- Revised Master Plan submitted to Customers by 30 Dec;
- Program Management Team meets in Jan 2014 regarding upcoming work;
- Sub-Agreement #5 discussed in Jan 2014 PRC teleconference and submitted to PCC for approval in March.

O&M Perspective – David Mistakovich



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