



Department of Energy
Washington, DC 20585

APR 24 2007

MEMORANDUM FOR DISTRIBUTION

FROM:

JAMES A. RISPOLI *J A Rispoli*
ASSISTANT SECRETARY FOR
ENVIRONMENTAL MANAGEMENT

PAUL BOSCO *P Bosco*
DIRECTOR
OFFICE OF ENGINEERING AND CONSTRUCTION
MANAGEMENT

SUBJECT:

Protocol for Environmental Management Cleanup
Projects

The attached Protocol will govern the review and validation of Environmental Management (EM) cleanup projects and is provided for your use and implementation.

If you have any further questions, please call me at (202) 586-7709 or Mr. J. E. Surash, Deputy Assistant Secretary for Acquisition & Project Management, at (202) 586-3867 or Ms. Catherine Santana, Office of Engineering and Construction Management, at (202) 586-5627.

Attachments



Distribution

Keith A. Klein, Manager, Richland Operations Office
Shirley Olinger, Acting Manager, Office of River Protection
Frazer R. Lockhart, Manager, Rocky Flats Project Office
Jeffrey M. Allison, Manager, Savannah River Operations Office
David C. Moody, Manager, Carlsbad Field Office
William E. Murphie, Manager, Portsmouth/Paducah Project Office
Jack Craig, Manager, Consolidated Business Center
Cynthia Anderson, Director, Site Support and Small Projects
John Sattler, Director, Brookhaven Federal Project Office
Richard Schassburger, Director, California Sites Project Office
John Rampee, Director, Separations Process Research Unit
Bryan Bower, Director, West Valley Demonstration Project Office
Donald Metzler, Director, Moab Federal Project Office
Elizabeth D. Sellers, Manager, Idaho Operations Office
Gerald Boyd, Manager, Oak Ridge Office

cc:

Richard B. Provencher, Deputy Managers Idaho Operations Office
Bruce B. Scott, Associate Administrator for Infrastructure and Environment, NA-50
Steve McCracken, Assistant Manager, Oak Ridge Office
Dennis Spurgeon, Assistant Secretary for Nuclear Energy, NE-1
George Malosh, Chief Operating Officer, SC-3
Alice C. Williams, NNSA
Charles E. Anderson, Principal Deputy Assistant Secretary for Environmental Management, EM-2
Dr. Inks Triay, Chief Operating Officer, EM-3
Frank Marcinowski, Deputy Assistant Secretary for Regulatory Compliance, EM-10
Mark A. Gilbertson, Deputy Assistant Secretary for Engineering and Technology, EM-20
Mark W. Frei, Deputy Assistant Secretary for Planning and Budget, EM-30
James J. Fiore, Deputy Assistant Secretary for Human Capital and Business Services, EM-40
John Surash, Deputy Assistant Secretary for Acquisition and Project Management, EM-50
Dae Chung, Deputy Assistant Secretary for Safety Management and Operations, EM-60

**PROTOCOL FOR EM CLEANUP PROJECT PERFORMANCE BASELINES
AND CONDUCTING THE EXTERNAL INDEPENDENT REVIEW
OR THE EM INDEPENDENT PROJECT REVIEW**

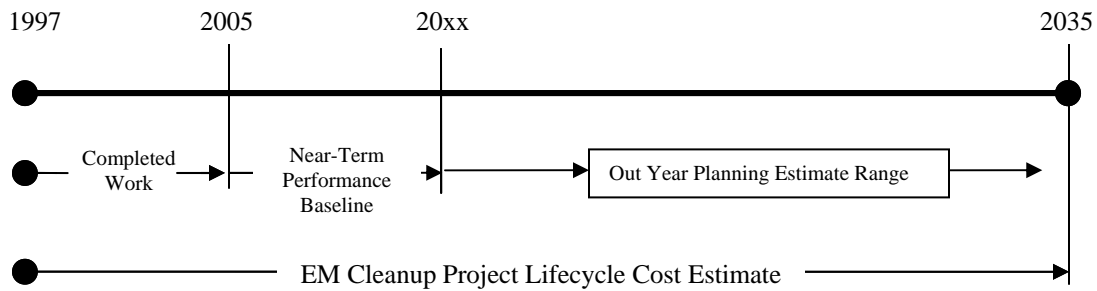
This Protocol for EM Cleanup Project will cancel the June 30, 2005 Protocol for EM Cleanup Projects in its entirety with the one exception of open EIR s. In FY 2003 EM decided to “projectize” the Project Baseline Summary (PBS) activities required to complete the EM mission at each DOE site. In most cases EM defines a Cleanup Project as the entire PBS; however, in some cases the project maybe a portion of one PBS or portions of multiple PBSs. It is EM’s responsibility to clearly define the composition of each project prior to the on site review. EM cleanup projects will apply the project management principles and policies described in DOE Order 413.3A in a tailored manner. Unlike the line-item capital asset projects that require an OECM validated performance baseline prior to requesting construction funds, EM’s cleanup projects were already in the CD-3 execution phase when EM decided to “projectize” them and are funded under operations budget accounts. Critical Decision (CD)-0 and CD-1 for these on going projects were waived because they were already in the execution phase. As new Cleanup Projects are created, a CD-0 and CD-1 approval by EM-1 as the designated Acquisition Executive (AE) utilizing the Environmental Management Acquisition Advisory Board (EMAAB) process will be required; however, for designated projects, the Deputy Secretary or Under Secretary for Energy may be the AE. These projects range from small projects with few risks and well defined scopes of work that can be completed in a short period of time with reasonable costs; to complex first-of-a-kind projects that have many unknowns, a longer schedule, and substantial costs; to projects that have undefined scopes of work with many risks and are scheduled for many years in the future at significant costs; to straight forward operating projects. Because of the diversity of projects in the EM portfolio it is impossible to apply a single approach to validating baselines.

The Office of Engineering and Construction Management and the Office of Environmental Management developed the initial protocol for conducting external independent reviews where the near-term baseline (scope that was under contract) would be validated and the remaining portion of the lifecycle cost would be considered reasonable. The results of those reviews were mixed, with fairly good success in validating the near-term baseline and less than expected in declaring the remaining portion of the lifecycle cost reasonable.

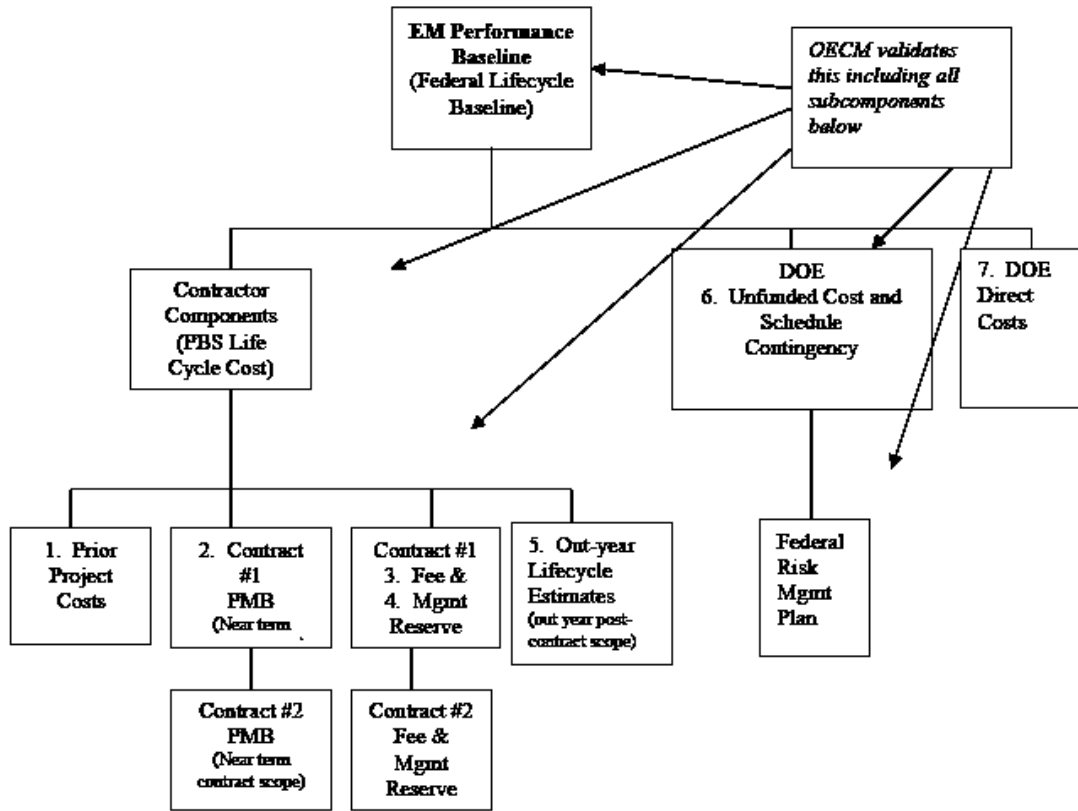
Discussions with the Deputy Secretary on EM Cleanup Projects prompted a change in the protocol for the execution of Cleanup Projects under DOE Order 413.3A. The protocol for EM having a near-term baseline that is reviewed for validation and a lifecycle estimate that is reviewed for reasonableness will continue; however, the approvals and the content for them will be modified. For CD-2, CD-3, and CD-4, the Acquisition Executive thresholds are as follows: the Deputy Secretary utilizing the Energy Systems Acquisition Advisory Board process serves as Secretarial Acquisition Executive (SAE) for Major System Cleanup Projects with a near-term baseline of \$1B or more or other EM Cleanup Projects designated as Major System Cleanup Projects, and the Assistant

Secretary for Environmental Management using the EMAAB process serves as AE for Cleanup Projects with a near-term baseline below \$1B. A new CD-0 and CD-1 approval will not be required when the next phase of the lifecycle estimate is advanced into a new near-term baseline; rather, a new CD-2/3 approval will be required after the EIR or IPR is completed and the near-term performance baseline is validated. As part of each new CD-2/3, key documentation such as the Project Execution Plan and Acquisition Strategy must be updated, reviewed, and approved. A CD-4 approval will be required when each near-term baseline is completed. The CD-4 documentation identified in DOE O 413.3A may be required for each CD-4.

Lifecycle of an EM Cleanup Project



Components of the EM Performance Baseline which are validated by OECM



Lifecycle Cost (LCC) Estimates for EM Cleanup Projects will be comprised of three components:

a.) Completed Work (The Prior Year Actual Costs). EM has established 1997 as the starting point for all Cleanup Projects. No costs before 1997 should be included in this number. The ending year will be the year before the near-term baseline begins. The timeframe of the completed work will increase each time the next near-term baseline or phase (5 or more years) of the cleanup project lifecycle is established and validated. In order to focus on the performance of the current near-term baseline, the performance measurement data including the cost and schedule variances and the variance at completion at the end of the near-term baseline will be archived in a historical file and not included as part of the near-term baseline variance reporting in either the EM Integrated Planning, Accounting, and Budgeting System (IPABS) or the OECM Project Assessment Reporting System (PARS). Each near-term baseline will have a new baseline to report performance against. Adjustments will not be allowed annually. The prior year actual costs are not a factor in determining who will serve as the AE or in determining if an EIR or IPR will be performed.

b.) The Near-Term Performance Baseline (e.g., Near-Term Baseline). The near-term performance baseline for Cleanup Projects will be for a minimum of five years or for the period of performance for the current contract if it exceeds five years. For projects which are scheduled to be completed within a few years (up to 3 years) after the five year period, the project validation will include the entire remaining out years. In the case where less than 5 years remain on the current contract, the near-term baseline should include the current contract plus the expected period of performance for the next contract. For Cleanup Projects with durations of five years or less, the entire project will be reviewed. In all cases except possibly the tail end of the project lifecycle, the near-term baseline will start at the beginning of a fiscal year and complete at the end of a fiscal year. When the proposed near-term period is not completely covered by a contract, EM will be responsible for developing summary level planning packages for those years not covered by the contract, and the entire near-term period will be included in the EIR or IPR. Once the contract is awarded and a detailed near-term performance baseline is developed, a follow-up limited EIR or IPR will be required if it exceeds the previously validated federal near-term performance baseline costs by 15 percent or more, increases schedule by a year, or modifies scope significantly. The near-term performance baseline includes fee and all costs associated with executing the project within the applicable (e.g., 5 year) window, even if the funding for the fee is in the next fiscal year budget which may be outside the near-term baseline. The fee is reported outside the performance measurement baseline but included in the near-term performance baseline. Because the number of years included in the near-term baseline can vary for each project, the final decision on the scope of the EIR including the length of the near-term baseline will be based on a negotiated agreement between OECM and EM. Near-term baselines will be based on target funding levels which are part of the current approved strategic funding plan (e.g., Five-Year Plan) issued by EM-30. An EIR will be conducted on the near-term baseline if its cost is equal to or greater than \$250M, otherwise an IPR will be conducted. Data will be reported in PARS through IPABS and will be used in developing the Monthly Project Status Report for the Deputy Secretary. The AE must approve CD-2/3 for the near-term baseline within 6 months after OECM issues a memorandum validating the near-term performance baseline or the validation will be considered void. The goal will be to provide a draft EIR report within 30 days after the on-site visit is completed. Corrective actions plans and closure of the actions will be the joint responsibility of EM and OECM. Directed changes will be addressed thru the baseline change process with EM being responsible for approving those baseline changes, ensuring they are appropriately documented, and incorporating them into the near-term performance baseline in a timely manner. A directed change is a change imposed on a specific EM cleanup project by a source external to DOE (e.g., Congress, OMB, Regulator, etc.) that affects the near-term baseline. Examples include changes in funding, DOE policies or directives, and regulatory or statutory requirements. A directed change will require a limited EIR or IPR if it affects the near-term performance baseline cost by 15 percent or more or delays scope by more than one year. For EM Major

System Cleanup Projects an Independent Cost Estimate should be developed or an Independent Cost Review should be performed as part of the OECM near-term performance baseline validation EIR. An Independent Cost Estimate should be performed where complexity, risk, cost, or other factors create a significant cost exposure for the Department.

c.) The Out-Year Planning Estimate Range (OPER). The OPER is defined as the first fiscal year following the last fiscal year of the current near-term baseline through project completion. If the completion date remains constant, the timeframe of the OPER will decrease each time a new near-term baseline is validated. Verifying the reasonableness of the OPER will be part of either the near-term baseline EIR or IPR. EM-1 will approve the reasonableness of the OPER, and will be responsible for managing, changing and controlling the cost and schedule ranges. The cost and schedule ranges may be adjusted annually based upon changing project or program conditions including directed changes. The OPER is audited annually by an external auditor as part of the external Environmental Liability Audit Review. The OPER will only be reviewed by the EIR or IPR team, when a new near-term baseline review is being performed. The OPER will not be a factor in determining who will serve as the AE. EM will tailor the requirements of DOE O 413.3A to the OPER but at a minimum include a summary scope of work, a cost and schedule range, a funding profile provided by EM-30, and a robust project and program risk management plan. The amount of details required will be less than the near-term baseline, and may vary from project to project based upon the complexity of the work, ability to define the remaining scope, regulatory drivers, disposition paths, existing or new technology requirements, etc. The scope of the OPER EIR and required documents will be part of the OECM and EM negotiations. The OPER will be reported in IPABS and in the planning section of PARS.

This protocol has been revised to address the concerns raised by the Deputy Secretary; concentrate the EIR review effort on validating the near-term performance baseline; provide for tailoring the DOE O 413.3A requirements, review plans and criteria for the various types of cleanup projects (soil and groundwater, deactivation and decommissioning, environmental remediation, spent nuclear fuel, solid or liquid waste, operating projects, etc.); and for developing a standard set of expectations for each type of EM Cleanup project.

Summary Process for Review and Validation of the Near-Term Performance Baseline and Verification of Reasonableness of the OPER

1. The near-term baseline and OPER for EM Cleanup Projects will have a tailored approach applied for complying with the DOE O 413.3A requirements.
2. Tailored lines of inquiry and the required documentation will be negotiated between EM and OECM prior to the on-site review.

3. In approving the near-term performance baseline at CD-2, the AE will use the results of either OECM's EIR validation review or the EM IPR of the near-term baseline.
4. An EIR or IPR will be conducted for each near-term baseline and OPER. For efficiency and where sensible, a single EIR or IPR, or possibly a joint EIR/IPR, may be conducted at a site where multiple cleanup projects are presented for validation. This determination will be part of the OECM and EM negotiations. OECM will conduct EIRs of all Cleanup Project near-term baselines that are \$250M million or greater. The EIR team will also verify the reasonableness of the OPER.
5. An OECM representative will accompany the EIR team to foster communication between the EIR and project teams, to facilitate the EIR process, ensure the focus remains on the scope of work and timeline, and help resolve issues.
 - In advance of each EIR, OECM and EM will come to an agreement on the scope of the EIR and documentation that will be required.
 - The FPD will be responsible for providing all required supporting program/project documentation to OECM and the EIR team 5 weeks in advance of the on-site review. No significant changes to the documentation should be made after it is submitted, nor should updated documentation be presented to the EIR team at the onsite review.
 - The EIR team will recommend if the project as planned is executable to the scope, cost, and schedule baselines and OECM will make the final determination if the project's near-term baseline can be validated.
6. Each site will develop an integrated project and funds management plan based on a detailed scope of work, cost, schedule, and target funding (budget) profile for the near-term baseline for each PBS and a summary level plan for the OPER.
 - Project near-term baselines must include, but are not limited to, establishing scope, cost and schedule, a resource loaded schedule or equivalent, work breakdown structure, a project execution plan or equivalent, updated Acquisition Strategy, risk management plan, and contingency analysis. Key documents should identify any further tailoring of the requirements contained in DOE O 413.3A and this protocol. The near-term baseline must be supported with documented basis for cost and schedule. For example EM project baselines must address:
 - Regulatory requirements in addition to technical and safety requirements.
 - Risk management through risk identification, analysis, and mitigation. It is the policy and practice of EM to conduct its operations in a manner that promotes overall risk planning including the assessment (identification and analysis of), implementation (or mitigation actions), monitoring, and

documentation of risk. The objective of this policy is to safeguard the interests of the public, the environment, the worker, and the government during the conduct of operations in meeting the EM mission objectives. It is also the objective of this policy to provide an accurate reflection of the bounding cost and schedule contingency requirements of the EM field operations.

- Project OPERs must include, but are not limited to, a summary level work breakdown structure, a cost range, a schedule range, a risk management plan, and contingency analysis. Other summary level documents may be available and required based upon the project scope and how well the OPER is defined.
 - Both federal and contractor elements of the risk assessment/management plans and contingency analyses (e.g., management reserve, unfunded contingency) will be part of the EIR or IPR.
7. The FPD and the contractor shall use an Earned Value Management System (EVMS) to manage, control, and measure progress and performance. Each contractor's EVMS must be reviewed and certified as compliant with the American National Standards Institute (ANSI) EVMS standard (ANSI/EIA-748- 1998). OECM is responsible for the EVMS certification program. The EIR will perform a limited review of the contractor's EVMS system. If the contractor's EVM system has been certified by OECM, the EIR Team should inform OECM as to whether EVM is being executed per the certified system.
 8. The FPD and the contractor shall identify measurable performance outcomes. Performance will be measured and performance metrics provided monthly to the appropriate executive official. Executive-level management reviews will be conducted for all projects quarterly to facilitate early identification of problems and to focus attention on solutions.
 9. The FPD shall report cost and schedule performance data into PARS against the validated near-term baseline within 30 days after the near-term baseline has been validated. In the case where a near-term baseline has not been validated, the FPD shall report cost and schedule performance data into PARS against the EM controlled near-term baseline.
 10. In the monthly assessment of project performance OECM will utilize all available information to make its assessment including but not limited to:
 - PARS data
 - Data Validity (including timeliness of entry)
 - Quarterly Reports
 - Project Reviews (EIRs & IPRs)
 - Discussions with Program and Project Managers
 - Other Information (e.g.DNFSB)

Projects will be assessed as:

- **Green** if the project is expected to meet its near-term cost/schedule performance baseline.
- **Yellow** if the project is at risk of breaching its cost/schedule performance baseline; and
- **Red**, if the project is expected to breach its cost/schedule performance baseline.

Attachment

EIR Scope for EM Cleanup Projects (in support of CD-2/3) and Required Documentation

The OECM EIR conducted on EM's cleanup project near-term baselines will cover five broad topical areas—Technical Scope, Schedule, Cost, Risk Management, and Project Management. Both the scope and required documentation may vary for specific operating projects depending on the types of activities that compose the project. This is in close conformance with the structure of the EM Project Definition Rating Index (PDRI). The verification of the reasonableness of the OPER will be based on similar summary level documents and information. The OPER will not be expected to meet the details required by the PDRI. Listed under each of the five topical areas are primary lines of inquiry. The review plan developed by the EIR Team, coordinated with EM and the project team, and approved by OECM for each EIR will clarify and expand upon the particular lines of inquiry in each topical area based on the scope of each project being reviewed.

Technical Scope

- Completeness of work scope definition; enables identification and quantification of risks
- Appropriateness of major methods utilized to achieve results
- High-level and regulatory requirements, key assumptions, end state vision, program and strategic initiatives, key agreements/decisions, Mission Need; key performance objectives
- Security, safety and hazards; DNFSB/NRC issues
- Facility - operations, D&D, construction; Remediation - soil, burial grounds, groundwater

Schedule

- Integrated project schedule consistent with the scope and cost estimate
- Detailed basis for the schedule duration
- Reasonableness of key schedule assumptions; relationship between PBSs
- Consistency of resource loaded schedule with the near-term baseline
- Reasonableness of schedule relative to the critical path and activity logic relationships
- Schedule contingency appropriate for the risks recognized

Cost

- Independent Cost Review of the near-term cost and assessment of the remaining lifecycle
- Basis for the cost estimates; comparison to parametric estimates and benchmark analyses
- Reasonableness of key cost assumptions
- Cost contingency appropriate for the risks recognized

- Consistency of project funding profile with resource-loaded schedule
- Inappropriate classification of discrete work as level-of-effort work

Risk Management

- Project risks identified, defined, prioritized, and analyzed
- Risk classification (high, medium, low) and quantification (probability and consequence)
- Avoidance and mitigation efforts incorporated in the baseline
- Risks analyzed and accounted for as MR/contingency in near-term and lifecycle baselines
- MR/Contingency based on quantitative risk analysis provides appropriate level of confidence

Project Management

- Management plans are valid, credible, and appropriate for type of project/operation
- Execution planning and staffing adequate and consistent with DOE requirements/guidance
- Organization and staffing plans/levels; appropriate disciplines included in IPT
- Identify any deficiencies in the IPT that could hinder successful execution of the project.
- Management controls, processes, procedures, responsibilities, authorities and reporting
- If EVMS not appropriate, assess the adequacy of an alternate project control system.
- Acquisition strategies and plans
- Performance management (e.g., performance metrics)

Required Documentation

In general, the following documents or equivalents are provided as a guide to determine which ones will be required for the EIR or IPR team to perform its review. Starting with the meeting between OECM, EM and the project team to define the scope of the EIR and continuing through the development of the review plan, OECM and EM will identify the appropriate documents that must be provided to the EIR team. The team may request other associated material to ensure a complete and accurate review is performed.

- Detailed Schedule with Resources for that portion of the near-term baseline that is under contract (resource-loaded schedule or equivalent documentation which links technical scope to cost resources to schedule),
- Summary Schedule with Resources for that portion of the near-term baseline that is not under contract but developed by EM.
- Detailed Cost Estimate of “near-term” activities for each project with supporting documentation for cost basis e.g. Vendor/subcontractor quotations for selected work items (normally provided at the on-site meeting); Escalation rates and Escalation Analysis;

- Critical Path Schedule for each cleanup project ;
- Target Funding Profile provided by EM-30
- Baseline Change Control Process description;
- System Functions and Requirements Document (e.g., "Design-to" requirements, Design Criteria - if applicable)
- Preliminary Design Drawings and performance specifications (if applicable)
- Results of and Responses to Preliminary Design Reviews (if applicable)
- Start-up Test Plan (if applicable)
- Hazards Analysis (if applicable)
- Risk Management Plan/Assessment (both federal and contractor)
- Management Reserve/Contingency analysis
- Acquisition Strategy
- Final Design Drawings and Specifications (if applicable)
- Results of and Responses to Site Final Design Review (if applicable)
- Construction Planning Document (if applicable)
- Current Contract (Scope of Work)
- Key Performance Objectives and other Performance Metrics (e.g., EM Gold Chart)
- Regulatory Compliance Plan (or equivalent) including Requirements, Processes and Status
- EM Liability Audit and Unfunded Contingency for Site
- Safety Documentation including Safety Validation Report (if applicable)
- Project Execution Plan, Performance Management Plan, Annual Work Plan, and/or equivalent documentation
- Results of previous reviews and Corrective Action Plan matrix showing resolution of all recommendations from previous reviews (i.e., EIRs, IPRs including PDRI results, Independent Cost Estimates/Reviews ,other independent reviews)
- IPT Charter, FPD appointment document, program/project management structure
- Most recent monthly reports (Three Months)
- Value Management/Engineering Report
- QA Plan and ISMP
- NEPA documentation
- Regulatory Consent Orders and Agreements
- Recent correspondence with DNFSB and/or USNRC identifying any issues or concerns and corrective actions taken or planned, if applicable.
- Complete WBS and WBS Dictionary
- Critical Decision approval documentation
- Sustainable environmental stewardship plan

Note: In advance of each EIR, the FPD shall provide, through EM headquarters all required documents in support of the EIR.