

## MFFFPEm Resource

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**From:** Tiktinsky, David  
**Sent:** Friday, March 05, 2010 4:35 PM  
**To:** 'DWGwyn@moxproject.com'  
**Cc:** MFFFHearingFile Resource  
**Subject:** FW: MOX Questions of Draft MPQAP Rev 9.doc  
**Attachments:** MOX Questions of Draft MPQAP Rev 9.doc

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This is the attachment that we referred to in my other email to you. Thanks.

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**From:** Cleavenger, Sabrina  
**Sent:** Thursday, March 04, 2010 11:14 PM  
**To:** Tiktinsky, David  
**Cc:** Arroyo, Damaris; Oesterle, Eric  
**Subject:** MOX Questions of Draft MPQAP Rev 9.doc

Dave,

I have attached the latest revision to the master question document for MOX. I added 4 questions today: Section 2 - Q's 1 and 2 and Section 3 - Q's 1 and 2. They are included in the master list (attached) and are highlighted in yellow.

We would like to get a feel for when MOX will be able to provide a response to our questions. Damaris and I are making good progress on the SER. I aim to complete my review and SER input by next Wednesday at the latest. That means that I will not be adding any additional questions to pass along to MOX after next Wednesday (hopefully even sooner). We have already identified all the management measures questions in the attached document. Additional questions, such as those that I have been sending piecemeal, will relate to gaps in the MPQAP.

After I complete my input, I will combine it with Damaris' input and do a comprehensive review to ensure consistent wording, level of detail, etc. I will plan for roughly a week to complete this review and to incorporate revisions MOX makes to the MPQAP to address our questions.

With all that considered, we need to work with MOX to find out when we will get their question responses and when they will provide us with the official MPQAP. Given our timeline and travel obligations that Damaris and I have later in the month, I personally would like to have answer to the questions by next Friday (March 12) or the following Monday and submission of the final MPQAP by St. Patty's Day.

If MOX is able to support those dates, we will be able to provide the final SER for submission to the tech editors by March 24.

Please let me know how this timeline sounds to you.

Thanks,  
Sabrina

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**Section 1 – Organization**

1. Section 4.2.2, “Quality Assurance Function,” of the MOX License Application states that “The manager of the quality assurance QA function is responsible for maintaining the MOX Services Project Quality Assurance Plan (MPQAP) and reports directly to the MOX Services President. This function is independent of the organizations responsible for performing quality affecting work and is independent of cost and schedule considerations. This function may be assigned other duties; however, these duties are not allowed to compromise the independence of this function or to prevent attention to quality assurance matters. The manager of the QA function has the same access to the MOX Services President as the line managers of other functional areas of the MFFF.

The manager of the QA function is responsible for identifying quality problems, recommending and verifying implementation of solutions, and ensuring further work is controlled until the unsatisfactory conditions has been corrected. The manager of the QA function is responsible for approval of the subcontractor quality assurance programs, oversight, and audit functions. The manager of the QA function also interfaces with NRC, stakeholders and other governmental agencies regarding the QA requirements, compliance with QA requirements, and resolution of QA concerns. These functions are accomplished by delegating and assigning responsibility to qualified personnel.

The QA manager is the only key management position in the QA organization. The minimum qualifications for the QA Manager position are a Bachelor’s degree (or equivalent), four years of quality assurance-related experience, two years of nuclear industry experience, and one year of supervisory or management experience.”

Section 1.2.2, “Vice President Project Assurance,” of the MPQAP states that:

The MOX Services Vice President Project Assurance reports directly to the MOX Services President. He is responsible for the Quality Assurance Program, Licensing and Regulatory Compliance.

Reporting to the Vice President Project Assurance is the Director of Quality Assurance, Licensing Manager and the Regulatory Compliance Manager.

The Director of Quality Assurance is independent of the managers responsible for performing quality-affecting work and is independent of cost and schedule considerations. He is responsible for maintaining the MOX Project Quality Assurance (QA) Plan and verifying its effective implementation at applicable MOX Services work locations. This position is independent of the managers responsible for performing quality-affecting work and is independent of cost and schedule considerations. Procedures are approved by the manager responsible for

the performance of the activities being controlled, procedures that directly implement the MPQAP requirements will obtain the concurrence of the quality assurance organization. MOX Services Quality Assurance will witness and/or perform specified testing and inspections of IROFS.

Reporting to the Director of Quality Assurance is the Quality Control Manager and the Quality Assurance Manager.

This organization is shown in Figure 1-2, Project Assurance Organization. The Quality Control Manager is responsible for the QC inspection program, performance of in-process and final inspections, certification of inspectors, performance of shop inspections and managing the nonconforming item program. The QA Manager is responsible for the performance of internal oversight (audits, assessments, monitoring of activities, supplier oversight, audits, surveillances, supplier QA Manual review, review of technical documents and procedures, managing the corrective action program, and performing trend analysis). This organization will evolve to support activities throughout the life of the project.

**Note:** *For this document, monitoring is defined as observing an activity as it is being performed or by review of documentation to verify conformance to established procedures. Condition Reports are issued for activities not complying with procedures. This activity is not used to document acceptance or approval of data or activities.*

The Director Quality Assurance may be assigned other duties; however, none of these duties are allowed to compromise the independence of this function or to prevent needed attention to QA matters. As a direct report, the Director Quality Assurance has the same access to the President as the line managers of the various functional areas of the project.

This position is able to:

- Identify quality problems
- Initiate, recommend, or provide solutions
- Verify implementation of solutions
- Assure, if applicable, that further processing, delivery, installation, or use is controlled until proper disposition of a nonconformance, deficiency, or unsatisfactory condition has occurred.

The Licensing Manager provides planning and execution of MFFF licensing activities, including interfaces with regulatory agencies, and managing the preparation and maintenance of the MFFF license application. This function is responsible for direct interface with the U.S. Nuclear Regulatory Commission (NRC) and the coordination between the U.S. Department of Energy (DOE) and the NRC for the MFFF license application.

The Regulatory Compliance Manager provides planning and execution of compliance activities, including interfaces with regulatory agencies, and managing the preparation and maintenance of the MFFF license application. This function is responsible for regulatory compliance and the direct interface with the U.S. Nuclear Regulatory Commission (NRC) and the coordination required between the U.S. Department of Energy (DOE) and the NRC for the MFFF regulatory application.”

*Please review these position descriptions and provide verification of the responsibilities of the VP of QA, Director of QA, and QA Manager. There is a lot of overlap in certain aspects of the position descriptions, so it is unclear with whom certain QA program responsibilities and reporting authorities reside.*

2. Please clarify what is meant by the term *MFFF regulatory application* in Section 1.2.2 of the MPQAP, “The Regulatory Compliance Manager provides planning and execution of compliance activities, including interfaces with regulatory agencies, and managing the preparation and maintenance of the MFFF license application. This function is responsible for regulatory compliance and the direct interface with the U.S. Nuclear Regulatory Commission (NRC) and the coordination required between the U.S. Department of Energy (DOE) and the NRC for the MFFF regulatory application.
3. Please clarify why there is no line of reporting access shown between the QA Manager and the President of MOX Services in Figures 1-1 and 1-2.

## **Section 2 – QA Organization/Training**

1. Section G2 of NUREG 1718 requires that the QA organization reviews and documents concurrence in the quality-affecting procedures.

Please confirm that QA organization reviews and documents concurrence in the quality-affecting procedures and that all concurrences on QA documents will be in writing.

2. Section G2.10 (c) of NUREG 1718 requires that, “For formal training and qualification, documentation includes a statement of the training objective and its content, the attendees, and the date of attendance.”

Please identify if the MPQAP commits to document the training objective and its content as well as the training date for formal training.

3. Section 15.4.4.3 (A), “Organization and Management of training,” of NUREG 1718 states that the following commitments regarding organization and management of training should be contained in license applications for MOX fuel fabrication facilities:
  - i. Line management should be responsible for the content and effective conduct of the training.

- ii. The job function, responsibility, authority, and accountability of personnel involved in managing, supervising, and implementing training should be clearly defined.

Section 2.3.3, "Organization and Management of Training," of the MPQAP states that "Line managers have responsibility for and authority to develop and effectively conduct training for their personnel. Training responsibilities for line managers are included in position descriptions."

Section 1.2.6, "Vice President Operations," of the MPQAP states that "During operations, this function is responsible for operation and maintenance of the facility, including configuration management, preparation of operating procedures, staffing and training of qualified plant personnel, implementation of a maintenance program and preparation of maintenance procedures, implementation of safe work practices and emergency response programs."

- Please fully define the job function, responsibility, authority, and accountability of personnel involved in managing, supervising, and implementing training.
  - Please specify to whom the line managers report
    1. Do they report to the VP Operations?
    2. Do any of the line managers in the Project Assurance Organization (i.e, quality assurance/control managers) hold training responsibilities? No training responsibilities are called out for quality managers in Section 1 of the QAPD.
2. Section 15.4.4.3 (B), "Analysis and Identification of Functional Areas Requiring Training," of NUREG 1718 states that "Analysis and identification of areas requiring training should be acceptable if the areas required for competent and safe job performance are identified, documented, and addressed by the training."

Please identify, document, and address the areas required for competent and safe job performance that will receive personnel training or include a commitment to do so in the MPQAP.

3. Section 15.4.4.3 (B), "Analysis and Identification of Functional Areas Requiring Training," of NUREG 1718 states that "Operations personnel, training staff, and other subject matter experts, as appropriate, should have conducted or should conduct a needs/job analysis to develop a valid task list for specific jobs. The jobs treated in this manner should include, as a minimum, those responsible for managing, supervising, performing, and verifying the activities relied on for safety and those specified in the Integrated Safety Analysis Summary (ISA; see SRP Chapter 5.0) that prevent or mitigate accidents. Each task selected for training (initial or continuing) from the facility-specific task list should be matrixed to supporting procedures and training

materials. The facility-specific list of tasks selected for training and the comparison to training materials should be reviewed on an established schedule and updated as necessitated by changes in procedures, facility systems/equipment, or job scope.”

Section 2.3.4 of the MPQAP states that, “A needs/job analysis is performed and tasks identified to ensure that appropriate training is provided to personnel working on tasks related to IROFS.”

Please clarify the following (and revise the MPQAP as necessary...please note that changing the language from “activities related to IROFS” to “IROFS and activities in the ISA Summary that prevent or mitigate accidents” may extend to other subsections):

- i) Will the needs/job analysis include training for those responsible for managing, supervising, performing, and verifying the activities specified in the Integrated Safety Analysis Summary that prevent or mitigate accidents?
  - ii) Will each task selected for training (initial or continuing) from the facility-specific task list be matrixed to supporting procedures and training materials?
4. Section 2.3.13 states that the “qualification requirements for technical personnel are determined as discussed in Sections 15.4.2 and 15.4.3.”

Please clarify this reference. (Should it be 2.3.4 and 2.3.5?)

5. Section 2.3.3 of the MPQAP states that “Training records are maintained to support management information needs associated with personnel training, and qualification.”

NUREG 1718 states that training records should support management information needs and provide required data on each individual’s training, job performance, and qualifications.

Does the MOX QA Program have provisions for maintaining training records for management consideration related to employee job performance?

6. Section 2.3.7 (E) of the MPQAP states that “Continuing training...may consist of periodic exercises, instruction, and review of subjects...” The paragraph later goes on to state that “Continuing training consists of computer-based or classroom and components performed on a frequency needed to maintain proficiency on the job.”

Please (1) clarify what continuing training will consist of. The term “exercises” infers practical, hands-on training which may occur outside of the classroom while the latter sentence indicates that continuing training is solely computer and classroom. (2) Please clarify the phrase “computer-based or classroom and components” in the second sentence to make sense.

7. Section 15.4.4.3 (G), “Conduct of on the job training,” of NUREG 1718 states that “On-the-job training should be conducted by designated personnel who are competent in the program standards and methods of conducting the training.”

Section 2.3.11 of the MPQAP states that OJT is conducted by personnel who are competent in the technical aspects of the job being performed.

Please clarify if the technically knowledgeable personnel identified in the MPQAP for the conduct of OJT will also be competent in the program standards and methods of conducting the training.

8. Section 15.4.4.3 (G), “Conduct of on the job training,” of NUREG 1718 states that “The conduct of on-the-job training should be acceptable if on-the-job training used for activities identified in the ISA Summary is fully described.”

Section 2.3.7 (D) of the MPQAP states that “Applicable tasks and related procedures make up the OJT/qualifications program for each technical area.”

Please describe the OJT that will be used for activities identified in the ISA Summary or identify where in the MPQAP this description is contained. Please identify the “technical areas” that will be part of the OJT/qualifications program.

9. Section 15.4.4.3 (G), “Conduct of on the job training,” of NUREG 1718 states that “On-the-job training should be conducted using well-organized and current performance-based training materials.”

Please describe the training materials that will be used for OJT.

10. Section 2.3.13 of the MPQAP states that that qualification requirements for technical personnel are determined as discussed in Sections 15.4.2 & 15.4.3. Please clarify this reference. Also, please perform a comprehensive search of the MPQAP for other references to Section 15 which may no longer be valid.

11. SRP 15.4.4.3 (I) of NUREG 1718 states that “Commitments should be provided regarding minimum qualifications for personnel required to meet NRC regulations. Minimum qualifications should be commensurate with the assigned functional responsibility and authority of the respective personnel. The following commitments should be in the application regarding personnel qualification for managers, supervisors, designers, technical staff, construction personnel, plant operators, technicians, maintenance personnel, and other plant staff required to meet NRC regulations:

- i. Managers should have a minimum of a B.S./B.A. or equivalent. Each manager should have either management experience or technical experience in nuclear facilities or activities similar to the mixed oxide (MOX) facility or activities that they are to manage.

- ii. Supervisors should have at least the qualifications required of personnel being supervised and either 1 additional year experience supervising the technical area at a similar facility or completion of the supervisor training.
- iii. Technical staff identified in the ISA Summary whose activities are relied on for safety to satisfy the performance requirements identified in 10 CFR Part 70, should have a B.S. or equivalent in an appropriate technical field and experience and training appropriate for their activities, authority, and responsibilities.
- iv. Facility operators, technicians, maintenance personnel, and other staff whose actions are required to comply with NRC regulations should have completed the applicant's training process or have equivalent experience or training.
- v. Candidates for process operators positions should be required to meet minimum qualifications described in the application. Candidates for job functions other than process operators should also be required to meet minimum qualifications, but these minimum qualifications need not be described in the application.”

Section 4.3.4 of the MOX License Application states that “The minimum qualifications for Operations Shift Managers are a high school diploma, one year of operations or manufacturing production experience in a nuclear facility, and one year of supervisory or management experience.”

- (a) Please explain why the operations shift management function does not require a BS/BA degree.
- (b) Please describe where in the MPQAP or the MOX License Application the minimum qualification requirements for positions other than managers (supervisors, technical staff, facility operators/technicians/maintenance personnel/staff, and candidates for process operator positions) can be found. Please ensure that the requirements for personnel qualification for all of the following positions are addressed in your response: managers, supervisors, designers, technical staff, construction personnel, plant operators, technicians, maintenance personnel, and other plant staff required to meet NRC regulations.

### **Section 3 – Design Control/Configuration Management**

1. Section G3.10(a) of NUREG 1718 states the following regarding design control verification: “The verifier is qualified, and neither the verifier nor the verifier's immediate supervisor is directly responsible for the design. In exceptional circumstances, the designer's immediate supervisor may perform the verification provided:
  - (i) The supervisor is the only technically qualified individual;
  - (ii) The need is individually documented and approved in advance by the supervisor's management; and

- (iii) QA audits and self-assessments cover frequency and effectiveness of the use of supervisors as design verifiers to guard against abuse.”

In Section 3.2.4 of the MPQAP, MOX identifies the following justification criteria for the use of a designer’s immediate supervisor as a verifier:

1. “The supervisor did not specify a singular design approach or rule out certain design considerations and did not establish the design inputs used in the design; or
2. The supervisor is the only individual in the organization competent to perform the verification.
3. The justification to use the supervisor shall be documented.”

Please identify (1) if MOX will (a) document the need for supervisory verification, (b) if the documentation will be done prior to the verification, and (3) if it will be approved by the supervisor’s management. Please identify (2) if MOX QA audits and self-assessments cover frequency and effectiveness of the use of supervisors as design verifiers to guard against abuse.

2. Section G3.11 provides provisions that should be included for the use of testing as the method of design verification. The section calls for the following provisions:  
“(a) Procedures provide criteria that specify when verification should be by test.  
(b) Prototype, component, or feature testing is performed as early as possible before installation of plant items or before such installation would become irreversible.”

Please clarify if MFFF procedures will provide criteria that specify when test should be used as the method of design verification. Also, please identify when testing will be performed (i.e., before installation).

2. Section 3.3.2 of the MPQAP states that “Configuration control is accomplished during design through...”

Please clarify the meaning of the word design in this context and confirm that it applies to design control/design activities rather than the design phase of the facility, since Section 3.3 of the MPQAP is labeled “Operations.”

Also, the first paragraph of Section 3.3.9 discusses the design and construction phases of the project. Please clarify the intent of this information in the operations section of the MPQAP. *\*\*\*This can be acceptable as background info since it supports licensing basis\*\*\**

3. Section 15.2.4.3 (E) of NUREG 1718 states that the applicant should perform initial and annual assessments of the CM program to determine the system effectiveness and to correct deficiencies.

Section 3.3.11 of the MPQAP states that periodic assessments are conducted in accordance with Section 18.3 of the MPQAP.

Section 18.3 has provisions for annual assessments.

Please identify MFFF controls for performing initial assessments of the CM program upon entering the operations phase.

## **Section 5 – Procedures**

1. Please provide references to MPQAP Sections or add further guidance to describe how MFFF will meet the provisions of Sections 15.5.4.3 (L), (M), and (Q) of NUREG 1718.
2. SRP Section 15.5.4.3 states that “Plant procedures should be written or planned for the conduct of all operations involving controls identified in the ISA as activities relied on for safety and for all management control systems supporting those controls.”

Section 5.1 of the MPQAP states that “Quality-affecting activities are prescribed by and performed in accordance with documented, approved QA programs...”

Section 5.3.3 of the MPQAP states that “The results of the ISA and other processes are used to identify specific operating and administrative procedures that are developed.”

Please verify that plant procedures have been or will be written for the conduct of all operations involving controls identified in the ISA as activities relied on for safety and for all management control systems supporting those controls.

*(Note from Sabrina...The statement that ISA results will be used for the identification of procedures to be developed is not an affirmation that procedures WILL BE developed for all IROFS-related processes, management controls, and activities. Additionally, “quality-affecting” is a vague term to credit for satisfying this requirement...)*

3. SRP Section 15.5.4.3 states that operating procedures should contain certain elements, including:
  - Regulations, policies, and guidelines governing the procedure
  - Initial startup

Section 5 of the MPQAP states that production procedures (which control process operations and apply to utility, workstation, and control room operations) will contain the following elements:

- Policies and guidelines governing the procedure

- Periodic startup/shutdown

Please clarify (1) if production procedures will contain regulations that govern the procedure and (2) if initial startup will be included in the procedures in addition to the periodic startup guidance.

*(Note: Section 5.2.2 of the MPQAP states that implementing documents shall contain technical and regulatory requirements. This could apply to the first bullet above, but it is not directly evident and would be more effective if the requirement were explicitly stated in the operation section with the other requirements)*

4. Section 15.5.4.3 (C) of NUREG 1718 states that management control procedures should exist for the following activities:

- Configuration management
- Human systems interface
- Audits and assessments
- Incident investigations
- Records management
- Design control
- Test control

These items are not included in the lists of administrative and operating procedures in Section 5.3.2 of the MPQAP. Please identify where the MPQAP commits to develop and implement these procedures or explain the justification for omitting them from the lists.

5. SRP Section 15.5.4.3(O) states that the applicant should perform periodic reviews of plant procedures and should, at a minimum, review ALL procedures every 5 years.

Section 5.3.7 of the MPQAP commits to review radiation protection procedures, respiratory protection procedures, operating and maintenance procedures every 5 years and establishes review requirements for emergency procedures (1-2 years).

Please identify what review requirements are applicable to administrative procedures.

6. SRP Section 15.5.4.3(O) also requires that all applicable procedures be reviewed for major facility or process modifications.

The MPQAP states that emergency procedures will be reviewed after modifications to a system. Please clarify if the other types of procedures used at MFFF will undergo review in response to major facility or process modifications and, if so, please identify where these requirements are contained in the MPQAP.

7. Section 5.3.7 of the MPQAP refers to the MFFF training program and states that it is addressed in Section 15.4. Please clarify this reference.

## **Section 11 – Test Control**

1. In Section 11.3.1, “Operations Tests,” the MPQAP mentions that there are two major testing programs; however, the programs list starts with a (B.) letter. Please clarify if there is an additional testing program not already identified in the MPQAP or if this is just an editorial error.
2. In Section 11.3.6, “Periodic Testing,” the MPQAP mentions that testing is scheduled such that the safety of the plant is not dependent on the performance of an IROFS that has not been tested within its specified testing interval. Please clarify how the program ensures that periodic testing will not compromise the availability of those already tested IROFS.
3. Please identify if any computer programs are being tested and, if so, what the testing requirements are for those programs and how the testing of such computer programs is documented.

## **Section 16 – Corrective Actions**

1. Section 16.3.2 of the MPQAP states that incident investigations are used for investigating abnormal events, other than those that involve conditions adverse to quality identified in Section 15.7.1. Section 15.7.1 does not exist within the MPQAP, and Chapter 15 of the License Application has been revised to remove all technical content. Please clarify this reference.
2. Section 16.3.2 states that “[M]OX Services shall maintain a record of corrective actions to be implemented as a result of off-normal occurrence investigations in accordance with CAP procedures. These corrective actions shall include documenting lessons learned, and implementing worker training where indicated, and shall be tracked to completion.” Also Section 16.3.3 includes the elements contained in the CAP procedures. Please clarify how the process ensures that documented corrective actions are taken within a reasonable period to resolve findings from incident investigations.

## **Section 17 – Quality Assurance Records**

1. Section 17.3, Quality Assurance Records for Operations, does not have clearly defined the commitment to:
  - Have procedures established and documented specifying the requirements and responsibilities for record selection, verification, protection, transmittal, distribution, retention, maintenance, and disposition.
  - Have an organization and procedures in place to promptly detect and correct any deficiencies in the records management system or its implementation.

The two commitments can be found in the previous section, please clarify if these commitments are also applicable to the operations phase.

2. Please clarify how the facility records management system will be updated to reflect any changes in the license application between the construction approval review and the review for a license to possess and use SNM.

### **Section 18 – Audits and Assessments**

1. The SRP requires that the internal and external audits to be conducted with a graded approach based on the results of the ISA. Please clarify if the results of the ISA are being considered in the conduct of audits and assessments.
2. Section 18.3.4 includes the performance of plant area walkdowns as a method of conducting audits and assessments. Please clarify if these walkdowns include out-of-the way and limited access areas?
3. Please clarify if the audits and assessment program provides for on-the-spot corrective actions with appropriate documentation.
4. Please clarify if technical and programmatic audits and assessments are performed internally and externally to provide a comprehensive independent verification and evaluation of procedures and activities for IROFS.
5. Please clarify if internal audits will address compliance with selected operating limits during facility operation.
6. Section 18.3.3 of the MPQAP states that the audit and assessment schedule is reviewed periodically and revised as necessary to ensure coverage commensurate with current and planned activities. Please clarify if the audit and assessments system will be updated and revised to reflect changes in the license application between the construction approval review and the review for a license to possess and use SNM.
7. Please clarify that there are provisions to ensure that any changes in the audits and assessment program will be reviewed and reflected in the program description.

### **Section 19 – Maintenance**

1. Please clarify that the PM will ensure the continued safety function of the IROFS even with unplanned outages.
2. Please provide a list of maintenance-related work control methods (*see NUREG 1718, Section 15.3.4.3 (C)*).

3. Please explain how the maintenance function will use, will interface with, or will be linked to other management measures control sections.

### **General**

1. Please review the MPQAP for references that are out of place, such as those identified in these questions, and make modifications as needed. Such references include those to Section 15, management measures, etc.

### **Supplemental Questions:**

Section 15.5, "Plant Procedures," of NUREG 1718 requires in Section 15.5.4.3 (G) that "The applicant should discuss plant procedure categories used at the facility. An acceptable discussion should clearly state areas for which a plant procedure is required. The applicant should provide a list of the types of activities that are covered by the plant procedures. This list should include the topics of administrative plant procedures; system plant procedures that address startup, operation, and shutdown; abnormal operation/alarm response; maintenance activities that address system repair, calibration, inspection, and testing; and emergency procedures. Appendix H to this SRP provides an acceptable list of the items to be included under each topic."

Appendix H, "Checklist for Plant Procedures," includes a list of activities that should be covered by written procedures. The list includes the following:

#### *H1. Operating Procedures*

- (1) Procedures that address startup, operation, shutdown, control of process operations, and recovery after a process upset include: (a) Ventilation; (b) Criticality alarms; (c) Shift routines, shift turnover, and operating practices; (d) Decontamination operations; (e) Plant utilities (air, other gases, cooling water, firewater, steam); (f) Temporary changes in operating procedures; and (g) Abnormal operation/alarm response including: (i) Loss of cooling water; (ii) Loss of instrument air; (iii) Loss of electrical power; (iv) Loss of criticality alarm system; (v) Loss of containment; (vi) Fires; and (vii) Chemical process releases.
- (2) Maintenance activities that address repair, calibration, surveillance, and functional testing include: (a) Repairs and preventive repairs of items relied on for safety (IROFS); (b) Testing of criticality alarm units; (c) Calibration of IROFS; (d) High efficiency air particulate (HEPA) filter maintenance; (e) Functional testing of IROFS; (f) Relief valve replacement/testing; (g) Surveillance/monitoring; (h) Pressure vessel testing; (i) Piping integrity testing; and (j) Containment device testing.
- (3) Emergency procedures include: (a) Response to a criticality, and (b) Hazardous process chemical releases.

#### *H2. Management Control Procedures*

1. Training; 2. Audits and assessments; 3. Incident investigation; 4. Records management; 5. Configuration management; 6. Quality assurance; 7. Equipment control (lockout/tagout); 8. Shift turnover; 9. Work control; 10. Management control; 11. Procedure management; 12. Nuclear criticality safety; 13. Fire protection; 14. Radiation protection; 15. Radioactive waste management; 16. Maintenance; 17. Environmental protection; 18. Chemical process safety; 19. Operations; 20. Calibration control; 21. Preventive maintenance; 22. Design control; 23. Test control.

Please identify where in the MPQAP the commitments to establish plant procedures for H1 (1), H1 (2), and H2 can be found or revise the MPQAP to include these commitments.