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Return to ensure
inputs/assumptions of
appeared designs are
still correct
of the A. net-600

NP 7.2.1

PLANT MODIFICATIONS



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PLANT MODIFICATIONS

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1.0 PURPOSE

NOTE: Since modifications have been initiated at various times and take various amounts of time to process (design, review, approve, etc.), implementation of revisions to this procedure and its associated forms (PBF-1584, PBF-1585, PBF-1605 and PBF-1606) will be phased in as follows:

- Modifications shall be processed in accordance with the procedure revision and using the forms revisions in effect at the time the modification's design process commenced. Processing in accordance with later revisions of this procedure or its forms is at the discretion of the FDGH.
- Any modifications **ACCEPTED** after 5/1/99 shall satisfy the 90 day closeout requirements specified in this procedure. Modifications **ACCEPTED** prior to 5/1/99 are required to satisfy the 180 day closeout requirements specified in Revision 3 (prior to 3/31/99) of this procedure.

1.1 This procedure provides:

- 1.1.1 The requirements for plant modifications to systems, structures and components at Point Beach.
- 1.1.2 The requirements for implementation of plant modifications.
- 1.1.3 The requirements for maintaining configuration control for plant modifications.

1.2 Requirements for design control are specified in NP 7.2.2, Design Control.

1.3 The methodology for evaluating and classifying plant changes is provided in NP 7.2.6, Engineering Change Process.

1.4 Additional guidance for use of this procedure is provided in Attachment 1 to this procedure, Commentary.

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2.0 DISCUSSION

- 2.1 **Plant Modification** - A physical change to PBNP systems, structures, and components that have been determined to be a design change, based on the classification criteria of NP 7.2.6.
- 2.2 **Emergency Plant Modification** – A Plant Modification which requires rapid action in order to (1) respond to significant plant or personnel safety issues or (2) avoid a unit shutdown or outage extension. Emergency approvals may **NOT** be granted if the modification requires a change to the Technical Specifications or the operating license, or includes an unreviewed safety question as defined in 10 CFR 50.59.
- 2.3 **Project Manager (PM)** - Individual assigned overall responsibility for design and implementation of the plant modification.
- 2.4 **Final Design Group Head (FDGH)** - The Design Engineering Supervisor responsible for the plant modification.
- 2.5 **Modification Package** - A documentation package controlling plant modifications to PBNP systems, structures or components. Modification packages contain or reference all documentation for the plant modification.
- 2.6 **Controlled Plant Equipment (CPE)** - Structures, systems, and components that are important to safe plant operation, which require more stringent design and project controls for their modification. These include systems, structures, and components that:
- Are safety-related, or
 - Whose functions impact the plant safety analysis, or
 - Other structures, systems, and components that are subject to special consideration based upon management discretion (e.g., considerations given to licensing basis, Augmented QA, the Maintenance Rule, personnel safety, availability, commercial risk, etc.).

3.0 RESPONSIBILITIES

- 3.1 Use of the modification process, and compliance with the requirements specified in this procedure, are the responsibility of the Design Engineering Manager.
- 3.2 The modification process, as delineated in this procedure, involves an integrated effort for design initiation, creation, implementation, acceptance and closeout that can affect every organization at PBNP. Responsibilities will be determined on a case by case basis for each modification as appropriate.

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- 3.3 The responsibility for determining the involvement required by various groups during the modification process rests with the Project Manager for the specific modification, with concurrence the responsibility of the Final Design Group Head (FDGH) for the modification.
- 3.4 Additional information regarding responsibilities are contained throughout this procedure and in Attachment 2 to this procedure.

4.0 PROCEDURE

NOTE: If any changes to the project scope or priority are made, the requester should be notified.

For expedited plant modifications (e.g., emergent work identified during outage) some project controls (scheduling, work breakdown structure) may NOT be warranted.

4.1 Overview

This procedure provides the requirements for plant modifications from initial needs assessment through modification closeout. The following modification aspects are addressed in this procedure:

- Modification Authorization – Engineering (EAC) and budgetary (IPC) authorization to design and install the plant modification, based on technical need and cost-effectiveness.
- Modification Initiation – Development of initial plant modification methodology and requirements, and assignment of design and project controls to be used for the modification, based on nuclear safety considerations and risk.
- Conceptual Design – Development of preliminary design of the plant modification, in order to identify and resolve engineering and licensing issues and obtain concurrence from the applicable plant groups for the modification.
- Detailed Design – Development of the final design, including modification bases, installation documents (working drawings), specifications, modification qualifications (calculations and analyses), and plant configuration controls (document and database updates).
- Independent Technical Review – Independent review of the entire modification, to ensure appropriate design inputs and methodologies used, and that the results are reasonable and properly incorporated in output documents (specifications, drawings, and installation/testing requirements). For modifications that affect nuclear safety, design verification per ANSI N45.2.11-1974 is performed.

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- Design Reviews – Reviews of the design by user groups, to ensure modification usability from the perspective of the group (constructibility, maintainability, operation, ALARA).
- Design Approval – Approval of the final design. For plant modifications that affect nuclear safety, the final design is approved by the FDGH. For plant modifications that do **NOT** affect nuclear safety, design approval is performed by the independent technical reviewer. After design approval, changes to the final design must be processed per NP 7.2.3.
- MSS Approval of 10 CFR 50.59/72.48 Safety Evaluation and IWP – MSS must approve all 10 CFR 50.59/72.48 safety evaluations and procedures (IWPs), as well as other items that affect nuclear safety. MSS approval of the 10 CFR 50.59/72.48 safety evaluation requires that the final design be approved.
- Release for Installation – FDGH release for installation requires an approved final design, approved 10 CFR 50.59/72.48 screening/safety evaluation, and approved work-directing document (IWP or WO Work Plan). This release requires these documents to be consistent.
- Modification Installation – The plant modification is installed by the work-directing documents (IWP or WO Work Plan). If changes are required to the final design, they must be processed per NP 7.2.3.
- Modification Testing and Acceptance – Post-modification testing is performed to ensure the installed modification will meet its design function. Appropriate plant documents require updating prior to testing. Following satisfactory completion of post-modification testing and document updates, the modification is accepted by the user group (typically Operations).
- Modification Closeout – Following modification acceptance and all modification document updates, the modification is closed out. At this point, the Plant Modification Index is updated and the modification is considered completed.

4.2 Plant Modification Authorization

Plant modifications are authorized in accordance with NP 7.1.6 to ensure that the modification is necessary and that the best technical options are utilized. The Integrated Planning Committee (IPC) authorizes expenditure of the funds necessary to design and install the modification. Level of effort modifications may be authorized by the Design Engineering Manager or the System Engineering Manager if funding is available in IPC authorized budgets.

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4.3 Emergency Modification Authorization and Initiation

An Emergency Modification can be authorized to begin installation prior to issuing a complete design package provided the following minimum requirements have been completed:

- 4.3.1 Advanced approval to begin the installation as an Emergency Modification has been given by an Engineering Manager.
- 4.3.2 A FDGH in Design Engineering has initiated the modification via PBF-1605 with specific identification that the modification is an Emergency Modification (noting the Engineering Manager providing approval).
- 4.3.3 The specific work being authorized, along with any prerequisites and limitations or operating restrictions for the work being authorized (e.g., "Modification X can be installed as long as the system is Out-of-service, and reactor power is restricted to less than 10%. Proceeding above 10% power or placing the system back in service requires completion of the modification through acceptance.") shall be specified on PBF-1605 by the FDGH.
- 4.3.4 A 10 CFR 50.59/72.48 safety evaluation or screening shall be completed for the scope of work being authorized.
- 4.3.5 An independent review (by Engineering) of the installation documents shall be completed.
- 4.3.6 The FDGH shall indicate release for installation of the emergency modification by signing the "FDGH- Release" section of PBF-1605. Annotation of any additional restrictions can be inserted in this section.

4.4 Initiation

- 4.4.1 Plant modifications are initiated by Engineering.
- 4.4.2 Complete the Initiation Section of Form PBF-1605, Plant Modification. Attach EWR or other basis document which summarizes the scope of the design change and provides the priority/authorization. If the plant modification is being expedited, the priority assignment may be waived.

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- 4.4.3 Provide information to the Modification Coordinator for record creation in the Plant Modification Index, including unique plant modification number, priority information, brief modification description, and any other pertinent information. The Modification Coordinator will create a Training Work Request (TWR) to request and document training needs associated with the modification, and document the TWR number in the "FDGH" section of PBF-1605.
- 4.4.4 Sign and date the initiation section of Form PBF-1605.
- 4.4.5 Forward Form PBF-1605 and other documentation to the Final Design Group Head (FDGH) for determination of applicable design controls and project controls.
- 4.5 The FDGH shall perform the following:
- 4.5.1 Ensure the safety and QA classification and other information specified on the Plant Modification (Form PBF-1605) is appropriate for the modification. Include evaluation of whether or **NOT** modification is for Controlled Plant Equipment (CPE).
- NOTE:** The purpose of Paragraph 4.5.2 is to maintain a consistent format and approach for plant modifications at PBNP. This step requires considerable judgement on the part of the FDGH. It is important that the guidance in Attachment 1 of this procedure be used carefully. Formal QA controls shall be specified for all plant modifications where an impact on quality or nuclear safety may be involved.
- 4.5.2 Using the guidance in Section 4.5.2 of Attachment 1 of this procedure, and considering whether or **NOT** the modification involves CPE, document applicable design controls and project controls required for the plant modification on Form PBF-1605. For all plant modifications, the following documentation is required:
- Nuclear Power Business Unit Plant Modification (Form PBF-1605)
 - Design Input Checklist (Form PBF-1584)
 - Design Documentation (Form PBF-1585, or equivalent)
 - Modification Request Checklist (Form PBF-1606)

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4.5.3 Using the guidance of Attachment 1 of this procedure, determine if a conceptual design is required for the modification. Conceptual designs are critical in that they ensure buy-in from the appropriate plant groups on optimization of the modification prior to performing detailed design to preclude engineering rework. If a conceptual design is **NOT** required, justification shall be provided in the Conceptual Design section of Form PBF-1605.

4.5.4 Sign and date the FDGH section of Form PBF-1605.

NOTE: The Engineering Advisory Committee (EAC) should be consulted for resolution of conflicts or questions relating to the Plant Modification urgency, scope, or project/design controls. The EAC represents Engineering and a large cross section of production groups and acts as an advisor to the FDGH in this capacity.

4.5.5 Assign Project Manager (PM) for the modification, and forward Form PBF-1605 and other documents to the assigned PM.

4.6 The Project Manager shall perform the following:

4.6.1 Provide input to the Modification Coordinator to update the Plant Modification Index as appropriate during the design, implementation, and closeout of the modification.

4.6.2 The EWR or other applicable NUTRK entries shall be updated with the plant modification number.

4.6.3 Define the Conceptual Scope. Initially, this definition needs only as much detail as necessary to estimate resources and establish the Project Team.

4.6.4 Estimate resources for the modification. As a minimum, this should include estimates of the engineering time required, the expenses anticipated, and impacts on other NPBU groups such as installation requirements. To the extent practical, engineering time should be estimated by discipline. A project number (Impact Project Number) should be specified.

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- 4.6.5 Establish a Project Team by contacting the group head of each applicable group and requesting an individual to be assigned to the project team. When the Project Team members are identified, an initial kick-off meeting will be held. Roles and responsibilities of each team member will be discussed, using Attachment 2 of this procedure as a guide. The team membership and responsibilities of each team member will be documented and kept updated. The Project Team shall be identified on the Plant Modification (Form PBF-1605). See Attachment 2, Modification Team Responsibilities, for additional guidance.
- a. The minimum members of the Project Team are as follows:
- Radiation Protection (if RCA or potentially contaminated)
 - Fire Protection
 - Installing Organization
- If any of the groups do **NOT** need to be on the Project Team, that group shall state the reason and sign on the Project Team Section of Form PBF-1605.
- b. Additional team members are determined based on the scope of the modification and its potential impact. When plant equipment is modified or replaced, Operations, Maintenance and System Engineering shall be contacted to determine if participation is warranted. Security shall be contacted for all modifications to determine their participation.
- c. In addition, the impact on training should be considered for all plant groups. Training impact will be evaluated and documented via TWR initiated when the modification is initiated.
- d. Obtain FDGH concurrence for Project Team members.
- 4.6.6 Place the plant modification into the integrated plant modification schedule. This will generally be based on the modification priority, estimated resources, and equipment outage schedules. If the plant modification is being expedited, it may **NOT** require development of resource-loaded schedule.
- 4.6.7 If appropriate, break up the plant modification into design packages. See Attachment 1, Commentary.

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4.6.8 Plant Modification Cancellation

If at any time it is determined that the design change is **NOT** economically or technically justifiable, the initiator will be consulted and the plant modification will be canceled by the PM. The following shall be performed by the PM for modification cancellation:

- a. Notify all team members of the cancellation and ensure concurrence.
- b. Document the basis for the cancellation. The cancellation, and the basis for the cancellation, shall be documented on the Plant Modification Cancellation, Form PBF-1641.
- c. Ensure all approved documents (e.g., calculations) are removed from the plant document control system, so that they do **NOT** become part of the plant design or licensing basis.
- d. Obtain cancellation approval using the same method as the original modification authorization. Form PBF-1641 will be signed/dated by the PM, then approved by the FDGH and Design Engineering Manager.
- e. Forward all plant modification documentation and associated documents (calculations, drawings), both approved and in progress, to Nuclear Information Management, who will perform the following:
 - File the completed modification package in the plant modification file.
 - Microfilm the modification package.

The Plant Modification Cancellation (Form PBF-1641) shall be included in this submittal.

- f. Provide copy of Form PBF-1641 to the Modification Coordinator for updating of the Plant Modification Index to indicate that the modification has been canceled.

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4.7 The Project Team members shall complete the following:

NOTE: Any changes in the project which affect the expected overall cost, scope, or installation schedule shall be reviewed by the FDGH. PM shall assure that such changes are also reviewed by the same bodies that granted original approval (EAC, IPC, ORC).

4.7.1 Develop the schedule for the modification design (design tasks, procurement, design reviews, and modification release) and update as necessary. With project team, develop work breakdown structure with tasks, task inter-relationships, and task assignments.

4.7.2 Identify design inputs to be used for the modification. Design inputs shall be considered early in the design to ensure that all appropriate inputs are used throughout the modification design. Document design inputs in accordance with NP 7.2.2, using Form PBF-1584, Design Input Checklist.

4.7.3 Prepare a conceptual design package, if required.

- a. The conceptual design should include the primary elements of the design, including as applicable:
 - Design inputs, in accordance with NP 7.2.2, using Form PBF-1584
 - Equipment description and layout
 - P&ID and electrical one-line diagrams (or mark-ups)
 - System and equipment operation
 - Plant modes and restrictions for modification installation and testing
 - Alternatives considered, and rationale for selected design
 - Analyses required
 - Installation schedule
- b. The Project Manager shall document a brief conceptual design description, and sign and date the Plant Modification (Form PBF-1605).

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NOTE: It is recommended that identification of necessary document updates (per Step 4.7.5.e) be initiated during the conceptual design phase, with input and buy-in from the affected groups.

- c. Obtain group and FDGH approval of the conceptual design package on Form PBF-1605 prior to proceeding with final design. See Attachment 1, Commentary, for additional guidance.

4.7.4 During the design process, the following tasks will be performed as required. These tasks can be performed in any sequence.

- a. Identify the installation group and sequence. This should include identification of resource requirements and a commitment of resources.
- b. Update the modification schedule and notify Production Planning and any affected groups of schedule changes. If the change affects the planned installation time frame, the EWR initiator should be notified.
- c. Perform all necessary interfacing with the Production Planning Group and the Outage Planning Committee to assure the project is appropriately planned. (Reference NP 10.2.1, NP 10 2 2, and NP 10 2 3)

4.7.5 Develop final design in accordance with NP 7.2.2 and the design controls specified on Form PBF-1605.

- a. Design Input Checklist, Form PBF-1584

The Design Input Checklist shall be prepared as follows:

1. Each of the items listed in the Design Input Checklist shall be checked as "YES" (design input is applicable), "NO" (design input is **NOT** applicable, or "N/A." If an entire section is **NOT** applicable, then "N/A" should be checked with an arrow to the end of the section in the N/A column.
2. Any item on the Design Input Checklist that is checked "YES" shall be addressed as an attachment to the form or within the modification package (Design Documentation, Form PBF-1585, or equivalent). Some items in the Design Input Checklist have specific instructions or additional documentation to be provided if checked "YES."
3. When completed, the Design Input Checklist shall be signed and dated by the preparer.

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b. Procurement of Material

1. The technical and quality requirements for equipment and material required for the plant modification shall be included or referenced in the modification package for procurement.
2. Specifications must be developed to support the modification installation schedule, including time required for bid evaluations and fabrication lead times.
3. Stand-alone procurement specifications are developed in accordance with NP 9.2.1. Specifications prepared in accordance with NP 9.2.1 will **NOT** be included in the modification package, but will be referenced.
4. The IMPACT database should be reviewed for stocked material that should be used if possible.
5. Specifications may also be provided within the modification package (design documentation) or other referenced documents in the modification package (e.g., Bill of Material on working drawings). Examples of these specifications include piping (A106, Grade B, Schedule 40, safety-related), structural steel (A36, Grade B, L2x2x1/4, safety-related).
6. The modification package shall document any justifications for use of alternate parts or materials. NP 9.3.2 and 9.3.4 provide guidance on these evaluations.

c. Calculations/Analyses

1. Calculations are prepared in accordance with NP 7.2.4.
2. Calculations provide the bases and requirements for the design change.
3. Calculations will **NOT** be included in the modification package, but will be referenced, and the calculation results will be translated to design requirements in the modification package.

d. Working Drawings

1. Working drawings are prepared and controlled in accordance with NP 1.4.1.
2. Working drawings provide installation requirements for plant modifications.

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3. Working drawings will **NOT** be included in the modification package, but will be referenced.

e. Modification Request Checklist, Form PBF-1606

NOTE: It is recommended that identification of necessary document updates (per Step 4.7.5.e) be initiated during the conceptual design phase, with input and buy-in from the affected groups.

The document update checklist is used to identify all design output documents (calculations, specifications, working drawings) that are to be placed in the plant document files due to the plant modification, as well as documents that must be updated as a result of the modification (procedures, permanent plant drawings).

1. Documents listed on the Document Update Checklist shall be classified as "N/A" (**NOT** applicable), "Acceptance" (required to be updated prior to acceptance of the modification), or "Closeout" (required to be updated prior to closeout of the modification).
2. Each document requiring updating shall be listed on the last page of Form PBF-1606, with the completion of the document updates tracked with the following information:
 - Section (of Form PBF-1606)
 - Document number (e.g., Bechtel drawing M-81)
 - Whether document update required for acceptance or closeout
3. Document updates are **NOT** required at modification release, but must be identified on this form.
4. Due to the importance of timely document updates at acceptance and closeout, draft document updates (e.g., DCNs, CARDS updates) should be prepared during the design phase to the extent possible.

f. Design Documentation, Form PBF-1585

This form documents the overall design change methodology for the modification, and should provide a summary of the modification, as well as its bases and outputs.

1. The following sections are required for completion of Form PBF-1585:

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- Design Purpose (purpose of the plant modification and the solution it is to provide).
- Scope (scope of the modification).
- Design Inputs (input used in the design, and all items checked "YES" on the Design Input Checklist). If all information is included on the Design Input Checklist, the checklist can be referenced on PBF-1585.
- Design Description (description of the modification and how it provides the solution described in the purpose).
- Analyses (analyses performed to qualify the design).
- Design Output Documents (documents developed as part of the design change package, such as calculations, specifications, and working drawings).
- Installation Requirements (design requirements that must be utilized during installation, such as tolerances and welding/NDE requirements).
- Testing Requirements (post-modification testing required to verify the critical design parameters, including acceptance criteria for the testing).

2. Alternate formats can be used rather than Form PBF-1585, provided that the same information is provided.

g. Other engineering and licensing documents shall be completed in accordance with the applicable procedure, and attached or referenced in the plant modification. Examples include:

- 10 CFR 50.59/72.48 screening/safety evaluation for modification
- R/R/M forms (Form PBF-1554) if the modification is to ASME Section XI equipment
- FPER Checklists
- FSAR Updates

NOTE: The independent technical review (Section 4.7.6) and final design reviews (Section 4.7.7) may be performed in parallel, at the discretion of the PM or FDGH. The preferred sequence is to complete the Independent Technical Review prior to the Final Design Reviews.

4.7.6 Design Independent Technical Review and Approval

a. If design verification is required (as specified by FDGH on Form PBF-1605), perform Parts b and c below. If design verification is NOT required, perform Part d below.

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- b. If the modification package requires design verification, complete the Design Verification Notice (Form PBF-1583). This is an ANSI N45.2.11 design verification and shall be performed in accordance with NP 7.2.2.
1. The FDGH shall select the independent verifier.
 2. The design verification shall include an independent review of all modification package documents. Approved input documents (calculations) do **NOT** require separate verification, but shall as a minimum ensure that the calculations are approved, and the results of the calculations are correctly incorporated in the final design.
 3. As part of the design verification, the verifier shall review the Design Input Checklist. This review shall consist of concurrence with items that are **NOT** applicable, along with concurrence on the documentation prepared for the items checked "YES." When this review is completed, the verifier shall sign and date the Design Input Checklist.
 4. The Document Update Checklist shall be reviewed by the verifier as part of the design verification. This review shall consist of concurrence with the document updates listed and whether they are required for acceptance or closeout.
 5. Following design verification and resolution of all comments to the satisfaction of the preparer and verifier, the preparer and verifier shall sign and date Form PBF-1583.
- c. Following all reviews and independent verification, the FDGH shall approve the modification package by signing Form PBF-1583. FDGH approval of the design is only required if the design affects nuclear safety per ANSI N45.2.11-1974. The FDGH verifies to the extent necessary, that the proposed design is safe and addresses all technical and administrative issues. This review should confirm the quality, accuracy, and constructibility of the design, as well as barriers to success. The FDGH also reviews the assembled modification package to verify that all required reviews and approvals have been obtained. If the package is complete, the FDGH approves Form PBF-1583 per NP 7.2.2, which is considered approval of the plant modification design.
- d. For plant modifications **NOT** requiring ANSI N45.2.11 design verification, an independent technical review is still required. This technical review will use the same methodology as the design verification described in Part b above, but completion of Form PBF-1583 is **NOT** required.

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Following the independent technical review, documentation is provided by the reviewer signature on the Design Input Checklist, Form PBF-1584. This constitutes approval of the plant modification design.

4.7.7 Final Design Reviews

Final design reviews shall be performed as follows:

- a. The PM shall identify the final design review groups on Form PBF-1605, Plant Modification. At a minimum, groups with team members shall have a final design review.
- b. Review groups shall review the modification package (additional guidance for content of the reviews is contained in Attachment 2) for any discrepancies and proper interfaces within their area of responsibility.
- c. The reviewers are responsible for notification of any co-workers within their group who may require knowledge of the modification package.
- d. The review group is typically reviewing the modification for usability from the perspective of the group.
- e. For the installation group, a constructibility walkdown should be performed in conjunction with the review.
- f. Review groups shall review the Modification Request Checklist (Form PBF-1606) to verify that all affected group and related procedures are identified and listed.
- g. After review and comments, the reviewers shall route the modification package to the PM to resolve any comments.
- h. The PM shall ensure that the training requirements for the modification have been evaluated and documented in the TWR. Any training requirements are to be reflected on PBF-1606 (including referencing the TWR).
- i. The PM shall coordinate comment resolution with all review groups and the independent technical reviewer and obtain reviewer signatures.

4.7.8 Design Changes Following Approval

- a. After approval of the plant modification design, changes to the design will be addressed by the ECR process per NP 7.2.3.
- b. If additional document updates are identified after plant modification

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design approval, the additional documents shall be added to the Modification Request Checklist (Form PBF-1606) by the PM.

NOTE: Sections 4.8 and 4.9 may be done concurrently.

4.8 If a 10 CFR 50.59/72.48 safety evaluation is required, the PM shall obtain PBNP Managers Supervisory Staff (MSS) approval of the safety evaluation. The 10 CFR 50.59/72.48 screening or safety evaluation shall be approved prior to plant modification release for installation.

4.9 Installation Documents

Installation Work Plans (IWPs) or WO Work Plans shall be developed to control the installation of the modification. All design engineering and licensing requirements shall be incorporated into these work-directing documents.

4.9.1 Installation Work Plans

If an IWP is required, use NP 1.2.2, Technical Procedure Classification, Review and Approval, to determine its procedure classification. Then using the guidance of DG-G02, Guideline for the Preparation of Installation Work Plans for PBNP Modifications, and, if applicable, NP 1.2.2, write an Installation Work Plan.

4.9.2 WO Work Plans

If the requirement for an IWP has been waived by the FDGH, a work plan in accordance with NP 8.2.12, Guidance for WO Work Plans, will still be necessary.

4.10 Affected procedures (i.e., IWPs or other procedures, voluntary entry into Limiting Condition of Operation (LCO), etc.) and other documents affecting nuclear safety, shall be approved by MSS prior to implementation.

4.11 Modification Materials

The PM shall interface with Nuclear Supply Services to ensure modification material is delivered and QA-released to support the installation schedule.

4.12 Independent Review of Installation Documents

FDGH will have an independent review performed to ensure that all design engineering and licensing requirements are appropriately incorporated into the work-directing documents. This review will be documented by signing the Plant Modification (Form PBF-1605). Items to be reviewed include, but are **NOT** limited to:

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- 4.12.1 Work document agreement with final design and 10 CFR 50.59/72.48 screening/safety evaluation.
- 4.12.2 Appropriate Post Modification Testing, along with acceptance criteria, has been specified.
- 4.12.3 Materials are consistent with those specified in the design documents and evaluated in the 10 CFR 50.59/72.48 screening/safety evaluation; and special or additional inspection/testing requirements identified in IWP.
- 4.12.4 Applicable plant conditions (safety evaluation may only be valid for specific plant conditions). Adequate detail shall be included to ensure all aspects of the 10 CFR 50.59/72.48 screening/safety evaluation are addressed.
- 4.12.5 Applicable codes (e.g., B31.1 vs. Section XI, year of codes/standards).
- 4.12.6 FDGH Release for Installation

The FDGH shall release the plant modification for installation. This is an administrative release which verifies that there is an approved design, approved 10 CFR 50.59/72.48 screening/safety evaluation, and approved work document (IWP or WO Work Plan), and that the modification is ready for installation. Once satisfied that this is the case, the FDGH will sign the modification as released for installation on the Plant Modification (Form PBF-1605).

- 4.13 PM shall perform the following:
 - 4.13.1 After modification package release, a copy of the modification package shall be provided to Nuclear Information Management for filing. This copy does NOT need to contain the design documents (ECRs, working drawings) that are already controlled by Nuclear Information Management.
 - 4.13.2 The PM shall forward the any necessary design documents to the installation group.

4.14 Plant Modification Installation

Documentation of modification installation, testing, and acceptance are contained in the work documents (IWPs or WO Work Plans), and are NOT duplicated here.

- 4.14.1 The plant modification shall be installed, tested, and placed in service in accordance with the approved IWP or WO Work Plan.
- 4.14.2 If the modification can NOT be installed as designed, design changes shall be processed per NP 7.2.3.

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4.14.3 Pre-acceptance

After installation is complete, and prior to post-modification testing, the PM shall:

- assure that ID tags are installed on all affected equipment.
- ECRs should be approved at this time.

4.14.4 Post-modification Testing

The package shall be forwarded to the group responsible for post-modification testing. The testing is conducted in accordance with the IWP, WO Work Plan, or applicable special test procedures (PBTP, etc.).

4.14.5 Modification Acceptance

- a. After successful completion of all post-modification testing, the PM shall:
- Assure that all required document updates required for acceptance are completed, as indicated on Form PBF-1606.
 - Drawing Change Notices (DCNs) shall be approved and posted to the Control Room, Work Control Center, and I&C documents that are required for the plant modification (Priority One). These documents will include as a minimum the P&IDs, Elementaries, Logic Diagrams, and Master Data Book. It will also include the I&C controlled set of reactor protection and engineered safeguards elementaries.
 - Assure that all ECRs have been approved.
- b. After successful completion of all post-modification testing, the user group will be requested to formally accept the modified system, structure or component for operation. The modified system, structure or component may **NOT** be operated until this acceptance occurs. The acceptance shall be documented in the IWP or WO Work Plan. Conditional acceptance may be used to accept portions of the tested system, structure, or component.

4.15 Project Closeout

4.15.1 After modification installation is complete, the installation group forwards the completed IWP or WO Work Plan to the PM.

4.15.2 Unused material shall be dispositioned (returned to stock or scrapped).

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- 4.15.3 The PM, with the project team, completes all required document updates required for closeout as indicated on the Modification Request Checklist (Form PBF-1606). The document updates should be performed in order of priority based on how they impact the operation and maintenance of the plant.
- a. When the documents are updated, this will be documented by signing the last page of PBF-1606. Each document will have a separate signature, along with other applicable information (e.g., DCN numbers).
 - b. The plant modification can **NOT** be closed until all document updates are completed.

NOTE: Any modifications **ACCEPTED** after 5/1/99 must satisfy the 90 day closeout requirements specified in this procedure. Modifications **ACCEPTED** prior to 5/1/99 are required to satisfy the 180 day closeout requirements specified in Revision 3 (prior to 3/31/99) of this procedure.

4.15.4 The PM has 90 days to complete all document updates required for plant modification closeout. If all updates cannot be completed in this time, the PM shall request an extension from the FDGH in writing. Any subsequent extensions shall be approved by the Design Engineering Manager. A copy of the extension approval shall be filed with the plant modification. The original goes to the Modification Coordinator for Plant Modification Index updating. The Modification Coordinator then returns it to the PM for inclusion with the modification package.

4.15.5 After all required updates are complete, the PM signs Form PBF-1605, and the plant modification is considered closed at this point. The PM then forwards the modification package to PBNP Nuclear Information Management.

4.16 Project Filing and Microfilming

Nuclear Information Management shall perform the following:

- File the completed modification package in the plant modification file.
- Microfilm the completed modification package.

5.0 REFERENCES

- 5.1 NP 1.2.2, Technical Procedure Classification, Review, and Approval
- 5.2 NP 1.3.1, Records Management Program
- 5.3 NP 1.4.1, Working Drawing System
- 5.4 NP 1.7.7, Safeguards Information

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- 5.5 NP 7.1.1, Requests for Engineering Services
- 5.6 NP 7.1.6, Engineering Advisory Committee
- 5.7 NP 7.2.2, Design Control
- 5.8 NP 7.2.3, Engineering Change Requests
- 5.9 NP 7.2.4, Calculation Preparation, Review, and Approval
- 5.10 NP 7.2.5, Repair/Replacement Program
- 5.11 NP 7.2.6, Engineering Change Process
- 5.12 NP 7.7.10, Safety-Related and QA-Scope Classification
- 5.13 NP 8.2.12, Guidance for WO Work Plans
- 5.14 NP 9.2.1, Specification Preparation, Review, and Approval
- 5.15 NP 9.3.2, Commercial Grade Dedication of New and Replacement Items
- 5.16 NP 9.3.4, Procurement Evaluations
- 5.17 NP 10.2.1, Outage Planning, Scheduling and Management
- 5.18 NP 10.2.2, Scheduling, Planning and Implementing On-Line Work
- 5.19 NP 10.2.3, Forced Outage Scheduling
- 5.20 NP 10.2.4, Work Order Processing
- 5.21 NP 10.3.1, Authorization of Changes, Tests, and Experiments (10 CFR 50.59 and 72.48 Reviews)
- 5.22 Design and Installation Guideline DG-G02, Guideline for the Preparation of Installation Work Plans for PBNP Modifications
- 5.23 PBF-1583, Design Verification Notice
- 5.24 PBF-1584, Design Input Checklist
- 5.25 PBF-1585, Design Documentation
- 5.26 PBF-1602, Engineering Work Request Initiation Form

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5.27 PBF-1605, Plant Modification

5.28 PBF-1606, Modification Request Checklist

5.29 PBF-1641, Plant Modification Cancellation

5.30 ANSI N45.2.11-1974, Quality Assurance Requirements for the Design of Nuclear Power Plants

5.31 Updates to this procedure covered by existing SCR 99-0311

6.0 BASES

None

7.0 ATTACHMENTS

7.1 Attachment 1, Commentary

7.2 Attachment 2, Modification Team Responsibilities

PLANT MODIFICATIONS

ATTACHMENT 1
COMMENTARY

The purpose of this Commentary is to provide additional guidance and explanations in the use of NP 7.2.1. This section will also explain clarifications to the requirements of this procedure. The Commentary is set up so that the paragraphs are numbered the same as the paragraphs they pertain to in the procedure section. Since **NOT** all paragraphs will have commentary, the numbering of the Commentary may **NOT** be sequential.

1.0 SCOPE

All plant modifications should first be evaluated by NP 7.2.6 to determine the proper method for implementing the change. This evaluation will result in specifying the method and procedure to be used. NP 7.2.1 provides the requirements for the design and implementation of modification to plant systems, structures, and components.

4.0 PROCEDURE

4.4 Initiator

Design changes may be initiated in a number of ways, including an EWR, a licensing commitment, or a Condition Report. Plant modifications must be authorized by EAC/IPC prior to initiation. The typical flow would be to have such a request (initiated by Operations or Maintenance) assigned to Engineering. The request would be categorized in accordance with NP 7.2.6, and, if appropriate, processed in accordance with this procedure. Engineering typically initiates the plant modification per this section of this procedure. The initiator will need to adequately describe the scope of the modification and the priority. If an EWR is **NOT** used, the initiator will need to document the priority some other way. An "unofficial" or un-numbered EWR form is recommended to do this (Form PBF-1602).

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4.5 Final Design Group Head (FDGH)

In this step, the FDGH scopes out the project and determines appropriate design controls and project controls. The FDGH also assigns a Project Manager.

4.5.2 In this section of the Plant Modification (Form PBF-1605), the FDGH determines appropriate design controls and project controls for the plant modification. Full design controls should be used in all cases where the aspect of the design directly affects nuclear safety. This is required by ANSIN45.2.11-1974. Where the direct effect on nuclear safety does **NOT** exist, judgment is required on the part of the FDGH. The following discussion is intended to assist the FDGH in determining appropriate controls for a project:

Design Input Checklist (Form PBF-1584) This form is mandatory for all plant modifications. This form is a compilation of lessons learned from past events and near-misses at Point Beach and throughout the industry.

Modification Request Checklist (Form PBF-1606) This form is mandatory for all modification packages. The form is a checklist to assure that all document updates have been identified and track their completion.

Design Verification Notice (Form PBF-1583) This form satisfies the Wisconsin Electric commitment to perform an ANSI N45.2.11 design verification for all design changes that affect nuclear safety. The requirement for determining if completion of this form is required is primarily based on whether the design change affects nuclear safety. Beyond that, the FDGH must consider the sensitivity of the project to plant operations and likelihood that an error could indirectly impact nuclear safety. For example, a modification of the turbine controls would **NOT** affect nuclear safety in its strictest definition, but judgement would probably dictate that such a sensitive change warrants additional level of review due to its very large impact on plant operations and its indirect effect on nuclear safety. Note that if this item is **NOT** required, an independent technical review is still required per the Design Input Checklist, although it would **NOT** be a full ANSI N45.2.11 level design verification.

PLANT MODIFICATIONS

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Working Drawings Working drawings are controlled drawings that provide installation requirements for plant modifications. The FDGH must consider whether control is needed over the design during construction. The value delivered by working drawings is that controlled documents (the working drawings) would be used by the craft in the field. Changes to the drawings (and therefore changes to the design) would be controlled via ECRs. If the design change affects nuclear safety, ANSI N45.2.11 requirements would dictate the use of controlled working drawings. Working drawings should be used in modifications to permanent plant equipment, even if **NOT** safety-related, due to the importance of configuration control. Only non-safety related plant modifications **NOT** affecting permanent plant equipment (e.g., sewage plant, Training Building) would normally waive use of working drawings and ECRs. If the use of working drawings is waived, uncontrolled sketches may be attached to the modification package.

Engineering Change Requests (ECRs) Engineering Change Requests provide the controlled process for initiation, preliminary resolution, and final resolution of changes to an approved design. The FDGH must consider applicability of ECRs in conjunction with applicability of working drawings (if working drawings are required, ECRs should be required). If an ANSI N45.2.11 design is performed, ECRs are required because that is the method by which an approved design can be revised. In addition, it would **NOT** be practical to require working drawings but **NOT** ECRs, since ECRs are typically used as a vehicle to expedite revisions to working drawing changes in the field.

Calculations When numerical manipulations are necessary to document the basis for a design, a calculation will generally be required. When the numerical manipulation is performed as a basis to conclude that a proposed design is safe where it affects QA-scope systems, structures or components it shall be done with a formal QA calculation. However, where the numerical manipulation does **NOT** affect nuclear safety, judgement by the FDGH is necessary, and application of the calculation procedure may **NOT** be required. In these cases, the manipulation will still be documented in the design documentation for the plant modification.

Specifications Specifications provide the technical and quality requirements for engineered equipment and materials. The FDGH shall determine whether specifications are required. If it is determined that specifications are **NOT** required, the PM may choose to issue specifications anyway, based on individual need or preference. Generally, if the item or services being procured affects nuclear safety, a formal specification will be used.

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Design Documentation Design documentation is required for all plant modifications, and provides a consistent method of documenting design activities in accordance with NP 7.2.2, Design Control. The design documentation encompasses the documentation of the entire design process, from selection of design inputs to final installation, testing and acceptance. It should be used in all cases, unless the FDGH permits use of an equivalent method/form. In this case, the reason shall be noted on the Plant Modification (Form PBF-1605).

Project Team A team is used to varying degrees on virtually all plant modifications. In this particular step, the FDGH is making a decision as to whether the particular package requires the establishment of a formal project team. Generally, a formal project team should be used for all plant modifications. The FDGH should consider how many groups are impacted, the complexity of the installation, and the overall risk to the plant. The PM/FDGH and project team members should work to optimize the level of participation needed by each group. The FDGH will indicate on the Plant Modification (Form PBF-1605) which groups should be requested for team participation. The minimum members of the Project Team are listed on Form PBF-1605, unless waived by that particular group. The following groups will normally be considered:

- Operations or another user group
- Maintenance group (MTN, I&C, etc.)
- Site Engineering (system or component engineer)
- Installation group (MTN, I&C, CE)
- RP (participation required for modifications in a radiologically controlled area)
- Training
- Site QA
- PSA group, if nuclear safety impacts exist
- Any other affected group, such as ISI if the project will likely impact ASME Section XI boundaries.
- Plant security group for security modifications or plant modifications which may impact security

Fire Protection/Appendix R Review This review is required for all modifications. This review is to ensure the proposed plant modification is within the current Appendix R program, and that all fire protection/Appendix R commitments are evaluated and documented.

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Project (Impact) Number The FDGH shall indicate the budgetary project that will fund the plant modification, including installation and materials. The FDGH will typically specify one of the small modification accounts, unless it is expected to surpass \$50,000 in which case a separate budgetary project will be assigned. The FDGH will consider the overall impact of the cost of this project on the integrated plant modification schedule when choosing the project to use for funding.

Detailed Project Schedule A modification schedule is typically required for all modifications, but the level of detail depends on the scope and complexity of the modification. The FDGH considers the complexity of the project, the consequences of **NOT** meeting the expected deliverable of the project, and the relative experience of the Project Manager in determining the schedule level required. If the combination of these aspects of project risk appear significant, the FDGH should require a detailed project schedule. In these cases, the FDGH should specify project segments or milestones to be included in the schedule.

IWP Required An Installation Work Plan (IWP) is generally used for modification packages due to the unique nature of them. The purpose of an IWP is to provide a solid level of overall coordination of the installation of the plant modification. Sometimes, the work order process is weak in its ability to assure that all pre-job requirements are clear and the required sequence of post-modification testing and overall job coordination is clearly defined. The FDGH shall determine whether an IWP is required. In doing so, the risks discussed above shall be considered. If an IWP is waived, a WO Work Plan will still be required.

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4.5.3 **Conceptual Design Package** The purpose of the conceptual design package is to assure that the user groups have agreed to the concept of the modification prior to performing detailed design. The danger in skipping this step is that the user groups may **NOT** see a modification package until it is ready for issuance. Even when a project team is assembled, there is still considerable risk of engineering rework if the concept of the project is **NOT** debated until after the details have been performed. The FDGH decision on whether to require a conceptual design package should be based on applicability of the following:

- Are there multiple solutions to the problem?
- Does the modification involve significant design or analysis?
- Does the modification involve multiple engineering disciplines?
- Is the installation in restricted or congested areas?
- Are multiple construction techniques applicable?
- Is maintenance/operation-intensive equipment being added?
- Has the same modification been implemented at the other unit?

4.6.6 Plant modifications may be broken up into multiple design packages (*A, *B, *C, etc.). Design packages shall be treated and documented as stand-alone projects. Each design package shall contain all appropriate design controls, inputs and outputs, references, etc. Typical reasons for breaking up a plant modification to design packages might be to separate support aspects or to accommodate installing the project in strategic "pieces."

Copies of Page 1 of PBF-1605 of the parent modification may be used for the individual design packages.

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- 4.7.3 If required on the Plant Modification (Form PBF-1605), the PM and the assigned project team will prepare a conceptual design package. The conceptual design will be documented on the plant modification form. At a minimum, the conceptual package will summarize the scope of the modification, the proposed design, and the expected cost and schedule. It will include marked-up P&IDs, one-line diagrams, elementary wiring diagrams, logic diagrams, new equipment descriptions, general arrangements, modified equipment layouts, or any other appropriate documents to define the concept and scope of the modification. The conceptual package will then be routed to the group manager of each group participating on the project team, and any other person designated by the FDGH and/or the PM. Review group approval of the conceptual design is documenting agreement with the conceptual design and authorizing final design to proceed accordingly. The PM will resolve all comments to the mutual satisfaction of the team and the individual providing the comments. Final design shall **NOT** proceed until the conceptual design is agreed to by all applicable groups.

The licensing aspects of the modification must be considered throughout the design process. Modifications that require a Technical Specification change or that involve an Unreviewed Safety Question must have NRC review and approval prior to implementation. This must be considered during the design process, along with lead times for NRC submittals and review/approval periods.

For complex modifications, the modification conceptual design and licensing considerations should be presented to MSS for information and concurrence.

- 4.7.6 These design reviews are for the purpose of ensuring the overall design is acceptable from the operability and maintainability aspect and does **NOT** conflict with operating procedures or criteria committed to the NRC. It does **NOT** constitute a technical review.

Review the final design and recommended document updates (Form PBF-1606). Identify and include any special group needs (training, spare parts, etc.) as comments.

- 4.7.6 All design change packages will receive an independent technical review. This review will be documented on the Design Input Checklist (Form PBF-1584). If a design verification is also required (based on FDGH design controls specified on Form PBF-1605), the technical reviewer shall also complete a Design Verification Notice (Form PBF-1583) per NP 7.2.2.

- c. In this step, the FDGH is performing the ANSI required design approval for design changes that require it.

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- Has the design control process been followed, including all design and administrative controls?
- Is there evidence that a good challenge has been presented to the modification package by qualified reviewers?
- Have all reasonable modes of failure been identified and addressed in the design?
- Has an appropriate level of post-modification testing been specified in the design, as well as the acceptance criteria?

The ANSI N45.2.11 design approval is documented on Form PBF-1583 and is controlled under NP 7.2.2.

- 4.12.6 In this step, the FDGH is performing the final administrative release of the modification package.

The release for installation is required for all plant modifications. This release is approval to turn the project over for construction. The FDGH shall consider the following in releasing a plant modification:

- In general, does it appear that the design is ready for installation at this time?
- Does the IWP/WO Work Plan adequately address the design, licensing, and testing requirements?

- 4.15.2 If, during installation, changes are determined to be necessary, they shall be processed as follows. The affected work shall stop until approvals for such changes have been received. Documentation shall be updated to reflect the approved changes.

- a. Change to any modification where the proposed change is a change in scope, concept, or intent. These changes shall be resubmitted with a new plant modification or new plant modification design package.
- b. Changes to modifications that do **NOT** change the scope, concept, or intent. These changes shall be approved by use of an Engineering Change Request (ECR). Each ECR shall be listed in the installation section of the IWP and on the Modification Request Checklist (Form PBF-1606).

- 4.15.5 Acceptance of modifications shall be performed as follows:

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- a. Acceptance of the modification is the responsibility of the user group(s) who will operate or use the modification. Acceptance requirements are found in the IWP/WO Work Plan and Modification Request Checklist (Form PBF-1606).
- b. If the modification is **NOT** acceptable, the PM and the user group(s) shall come to agreement as to what the particular problem is and how it will be resolved. The PM will be responsible to assure that all necessary changes are completed prior to final acceptance.
- c. Acceptance shall signify that installation and testing is complete and adequate for operation, required training has been completed, and necessary documentation updates have been completed. Modification acceptance shall be obtained prior to placing the system into service for operation (other than for testing).
- d. Some modifications will undergo acceptance in two steps,
(1) Conditional acceptance, signifying the modification is installed and ready for testing or partially installed, and (2) Final acceptance, after all post-modification testing is successfully completed and the system is ready to be placed in service.

4.16.5 The plant modification is considered closed out at the point when the document updates have been submitted. Once the Project Manager has submitted all of the updates, the plant modification should be updated in the Plant Modification Index as closed.

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ATTACHMENT 2
MODIFICATION TEAM RESPONSIBILITIES

SCOPE

The purpose of this attachment is to provide guidance to the individual project team members as to their respective responsibilities on each modification. These will be the minimum duties expected of each member, and as the design group meets, or as the design process progresses, more duties may be assigned. It is expected that each project team member will take full responsibility for accomplishing their assigned duties.

GENERIC RESPONSIBILITIES

The following are the generic responsibilities of the design team groups:

Construction Engineering (CE):

- Installation input on modification.
- Review of IWP, design documents, drawings, etc., from an installation point of view.
- Interface with PBNP planners to assure installation time is appropriate.
- Complete appropriate "modification release" paperwork.
- Coordinates with other groups for getting contractor site access, permits, etc.
- Liaison Engineer takes over for PM at time of installation. PM must be available as needed.
- Modification installation schedule.
- Verification and final check that all necessary installation documents are in the IWP/WO Work Plan.
- Verifies installation is complete using IWP/WO Work Plans and drawings.

Radiation Protection (RP): (RP approval is required for modifications in a radiologically controlled area)

- Evaluate various ways of doing modification for purposes of ALARA in regard to installation sequencing and design selections.
- Evaluate chemicals on the control side with regard to hazardous waste.
- Design input in RP areas, i.e., Drumming area.
- Keep RP group current on the modification so that others can work with the modification team in the event of an absence.
- Managing and sampling of hazardous waste, i.e., asbestos, chemicals, to reduce cost of doing the modification.
- Contamination and waste generation control on the control side to reduce modification cost.
- Assist in giving contractors access to the control side.
- RP procedure updates.

Maintenance (MTN) and I&C:

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MODIFICATION TEAM RESPONSIBILITIES

- Determine spares with PM.
- Review of IWP, design documents, drawings, etc., from an installation and maintainability point of view.
- Up-front design input and walkdowns.
- New procedures and procedure updates for group (RMPs, ICPs, etc.). (I&C only)
- Assist in component selection.
- Testing of modification.
- Modification installation (including scheduling, supervision, and overall ownership of the installation).
- Updates of technical manuals. (I&C only)
- Obtain permits for field issue.
- Represent the group with input (central point of contact), including commitment of resources via consulting with planners.
- Review/establish maintenance requirements on modified equipment.
- Assure installation package contains appropriate documents (VLCO, PMT, etc.).
- Identify and assist in performing MTN/I&C document updates.

Operations (OPS):

- Addresses operability of the modified system, as well as installation input into modification design, installation and testing. Must canvas appropriate Operations personnel, so that the group's desire associated with the modification are represented, NOT just that of a particular crew or individual.
- Provide OPS input to the modification engineer.
- Keep OPS crew or appropriate personnel current on the modification so that others can work with the modification team in the event of an absence.
- Make necessary preparations to facilitate the modification installation in the event of an absence.
- Provide IWP input to the PM concerning any OPS steps, such as system/plant preparations, contingency actions, tagout boundaries, how to drain the system, system recovery steps, return to service testing, etc.
- Ensure the Control Room staff is briefed as necessary several days prior to the modification installation. This is to ensure the required plant/system preparations, and any contingency actions are understood, and can be met.
- Participate in modification team meetings.
- Carry out any modification-specific OPS group responsibilities that may be assigned by the modification team.
- Identification and performing of OPS procedure updates.
- Control Room drawings: Ensure DCNs are submitted for the new configuration of the system to be posted to the Control Room, Work Control Center, and I&C drawings.
- Input as to CHAMPS descriptions, number, etc.

Quality Assurance (QA):

- Facilitate the procurement of all material as requested.
- Ensure proper scope of the modification.

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MODIFICATION TEAM RESPONSIBILITIES**

- Monitor the execution/installation of the modification to ensure that quality requirements are satisfied.
- Provide reviews of modification-related documents to ensure that quality requirements are adequately addressed, and that governing procedures are complied with.
- Scope any equipment for Q-list.

SITE DESIGN ENGINEERING:

- System tie-in: Identify on the affected P&IDs where tie-ins are located. OPS is responsible for valve line-ups to isolate affected component.
- Tag outs: Identify the affected piece of equipment, and the date it needs to be tagged out. OPS to prepare tag series and hang the tags. Let OPS know scope of work.
- New equipment purchases: Provide user groups with CHAMPS ID, equipment description, and maintenance manual. User groups are responsible for generation of equipment call-ups, and selection/procurement of spare parts. CHAMPS personnel are responsible for the initiation of the label request forms.
- Seismic verification: Prior to procurement of seismically qualified equipment, provide cable routing and equipment mounting details, along with seismic verification walkdown requests, to the seismic capability engineers.
- Procedures: Assure listed on Document Update Checklist, and pursue with responsible group.
- RWP: Identification of the scope and location of work on the control side. Installation group is responsible for identifying the craft requirements. RP to prepare the RWP.
- Hydrostatic testing: Provide system temperature, pressure, and elevation information. PM, with OPS to prepare the test paperwork, identify test rig tie-ins location, and valve line-up.
- Job schedule: Submit WO that describes the work scope, and identify desired installation date. Planner to schedule a preliminary installation window. Planner to notify PM as to the date of the window, the names of the craft personnel, and the installation supervisor.
- Determine post-modification testing required, and provide acceptance criteria.

TRAINING:

- Assign trainer to modification as appropriate, to interface for training department.
- Coordinate with the PM in providing proper modification descriptions to be used for developing training materials.
- Ensure modification is incorporated into training curriculum for continuing and initial training materials as appropriate.
- Ensure modification is entered into NUTRK, assigned a TWR (training work request) for any action item within the training group.

SYSTEM/COMPONENT ENGINEERING:

- Involved in the selection of equipment/vendors which affect components for which they are

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ATTACHMENT 2
MODIFICATION TEAM RESPONSIBILITIES

responsible.

- System and component engineer to be involved in the review of the Installation Work Plans regarding those sections directly involved with the mechanical field installation.
- Component engineer to be involved in the review of specifications written for acquiring equipment for those items that they are the component engineer.
- System and component engineer to be involved in recommendations, review, and acceptance of the final design.
- Component engineer to be involved in the review and recommendation of what is to be established for future PM maintenance, and any specific component maintenance programs.