ENTERGY

ENTERGY OPERATIONS INCORPORATED
ARKANSAS NUCLEAR ONE

TITLE: CONTROL OF MODIFICATION WORK

PROC/WORK PLAN NO.	REV.
6030.005	2

EXP. DATE	SAFETY-RELATED
	☒YES ☐NO

PAGE 1 OF 1	IPTE ☐YES ☒NO

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1.0 PURPOSE

1.1 This procedure identifies the process and establishes the minimum standards to be used by Modifications in the issuance and control of Modification work packages.

2.0 SCOPE

2.1 This procedure applies to all plant modification work performed by the Modifications Department. It supplements the administrative control requirements of **Reference 3.1.2.**

2.2 This procedure addresses:

2.1.1 General requirements associated with the development of work packages.

2.1.2 The format and content of Controlled Work Packages (CWPs).

2.1.3 The process associated with the development, review/approval and control of CWPs.

2.3 This procedure does not address the material identification and assignment activities, or the cost and schedule control activities performed by Modifications in the control of the Department's work activities.

3.0 REFERENCES

3.1 References used in implementing this procedure include:

3.1.1 1000.006, Procedure Control, Attachment 9, "Independent Verification"

3.1.2 1000.024, Control of Maintenance

3.1.3 1000.044, Protection of Safeguard information

3.1.4 1000.128, Industrial Safety and Occupational Health

3.1.5 1000.143, Control of Infrequently Performed Tests or Evolutions

3.1.6 1015.002, Decay Heat Removal and LTOP System Control

3.1.7 6020.002, Control of Design Change Documents

3.1.8 6030.001, Installation Plan

3.1.9 6030.002, Field Change Request (FCR) Preparation and Control

3.1.10 6030.004, Control of Prefabricated Parts and Subassemblies

3.1.11 6030.006, Control of Blind Drilling Operations

3.1.12 6030.102, Installation of Anchor Bolts

3.1.13 6030.200, Administration of Post-Modification Testing

RC-1 | 3.1.14 SES-27 CRITICAL PIPE REQUIREMENTS

3.2 NRC COMMITMENTS

3.2.1 OCAN019106, Response to Violation (313/9030-02) Resin Dewatering (Commitments included in Section 6.2.4)

3.2.2 0CAN128801, Response to Inspection Report 50-313/88-32 and 50-368/88-32 (Commitments included in Section 6.2.9)

4.0 DEFINITIONS

4.1 JOB ORDER (JO) - The station document (Form 1000.24B) used to authorize, control and permanently record work activities and services performed on station equipment, systems, buildings, or grounds.

4.2 WORK PACKAGE - A package of documents issued to the responsible work center which includes the required work authorization, together with the information and documentation needed to perform, inspect and document the associated work activity. In the context of this procedure, a work package may either be a Controlled Work Package (CWP) or a job order with the associated work instructions and supporting documents.

4.3 CONTROLLED WORK PACKAGE (CWP) - A specific form of work package used by Modifications to control and document work activities associated with the installation of Modification Packages and selected other non-MP job orders as designated by the responsible Modification Supervisor.

4.4 MODIFICATION PACKAGE (MP) - A package of engineering documents that describe a modification or change in a plant structure, system or compound. A MP may take the form of a Design Change Package (DCP), a Limited Change Package (LCP) or a Plant Change (PC).

4.5 WORK AREA - The area(s) encompassed by the work steps in the CWP. This includes the field offices and modifications offices, toolrooms, warehouses, fab areas, and material staging areas.

4.6 CRAFT SUPERVISOR - The contractor Foreman, General Foreman, or Superintendent responsible for Craft performing work per the work package. This also includes plant craft supervisors and lead craftsmen.

5.0 RESPONSIBILITIES

5.1 MODIFICATION MANAGER

Provide authorization for any prefabrication or pre-installation work activity which is performed before the associated MP has been approved for installation.

5.2 MODIFICATION SUPERINTENDENTS

Assign MPs (on their respective units) to individual Modification Supervisors for implementation.

5.3 MODIFICATION SUPERVISORS

5.3.1 Review assigned MPs, assign Modification Engineers to develop the associated CWPs, and coordinate and oversee the CWP development and implementation efforts.

5.3.2 Review assigned non-MP related job orders and determine whether or not CWPs are required to control the associated work activities.

5.3.3 Review and approve CWPs for assigned MPs.

5.4 STARTUP SUPERVISOR

Perform responsibilities of Modification supervisor on startup-related CWPs.

5.5 MODIFICATION ENGINEER

5.5.1 Develop CWPs as assigned by the Modification Supervisor.

5.5.2 Perform constructibility walkdowns and coordinate with the Modification Supervisor, Craft Supervisor and Quality Engineering in planning the CWP work activity.

5.5.3 Coordinate the resolution of design problems associated with the CWP work effort with the responsible Design Engineer.

5.5.4 Monitor the CWP implementation effort and develop/issue changes to the CWP as required.

5.5.5 Identify when a controlled copy of a CWP is required for work inside of a contaminated work areas, by checking the "CONTROLLED COPY" block on the CWP coversheet and CWP change notice forms.

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5.5.6 Ensure the required CWP steps are signed off by all parties before Turnover of the MP is complete. Required CWP steps are those steps not associated with Open Items listed on the Open Item Log.

5.6 CRAFT SUPERVISOR

5.6.1 Assist the Modification Engineer in scoping and planning the CWP work activity.

5.6.2 Review and approve CWPs.

5.6.3 Conduct a pre-installation review of the CWP with the craftsmen who will be performing the work.

5.6.4 Oversee CWP work activity, coordinate with station personnel as necessary to implement the CWP, and ensure procedures/forms are properly filled out and signed-off.

5.6.5 Shall ensure each employee performing work per a work package has the enclosures necessary to perform that work.

5.6.6 Shall ensure each employee performing work per a work package knows the location of the CWP (or Job Order if that is the controlling document)

5.6.7 Shall ensure material traceability is maintained per Section 6.5.15.

5.7 QUALITY ENGINEERING/QUALITY CONTROL

5.7.1 Review and approve CWPs involving Q, EQ, II/I Seismic, F-listed work or code welding, and identify required QC witness/hold points for incorporation in the CWP work instructions.

5.8 MODIFICATION CENTRAL FILE

5.8.1 Provide Test Copy documents for inclusion into CWPs.

5.8.2 Maintain controlled CWP files, and control the issuance and distribution of CWPs and CWP Changes Notices.

6.0 INSTRUCTIONS

6.1 GENERAL REQUIREMENTS

6.1.1 All work activity performed by Modifications shall be initiated and controlled by job orders in accordance with **Reference 3.1.2.** The scope of the work activity included in a CWP shall be limited to the work scope outlined in the associated job order and performed within the specified tag-out boundaries.

6.1.2 A CWP shall be required for the performance of modification work activities except as defined below:

A. If a Plant Safety Committee (PSC) approved Work Plan or procedure is developed/provided, then a CWP will not be required if all applicable conditions required by a CWP are included.

B. If a DCP, LCP or PC contains work-type instructions/ procedures as an integral part of the package that has been reviewed and approved by the PSC, then a CWP will not be required if all conditions required by a CWP are included.

C. If a job order package is issued for work to be performed by Modifications and contains the following, then the intent of a CWP is met and is not required:

1. Individual sign-off steps for each work instruction.

2. A sign-off blank for the Craft Supervisor to ensure a pre-installation review has been conducted with the craft performing the work.

3. All other applicable requirements as set forth by this procedure.

In these cases, the original job order and job order instructions shall be on hand at the work area and step-by-step work instructions shall contain the required sign-off blanks.

6.1.3 Work packages involving Safeguard Information shall be subject to the special controls and handling instructions provided in Reference 3.1.3.

6.1.4 Individual pages may not be removed from the body of a CWP or Job Order except for replacement due to revision. Enclosures may be separated from the work package when the package covers multiple job sites.

6.2 PREREQUISITES AND PRECAUTIONS

Work packages shall identify prerequisite conditions (i.e., equipment/system tag outs, special permits, etc.) which must be established prior to commencing the associated work activity, as well as any special precautions that are to be taken in the performance of this work. When applicable, the following precautions shall be taken and/or special requirements included in the work package:

6.2.1 Reactor Coolant System (RCS) Reduced Inventory

No modification/activity that directly affects the equipment listed in Attachment B of Reference 3.1.6 will be performed during RCS reduced inventory conditions. When a work package requires work on equipment listed in Attachment B of Reference 3.1.6, a caution note will be written into the text of the work package warning against working on that equipment during RCS reduced inventory conditions.

However, at the express permission of the Operation's Shift Supervisor, special cases may be allowed provided that special compensatory measures are placed into effect to the Shift Supervisor's satisfaction. In these cases, a sign-off blank shall be provided for each affected step for Operations concurrence that those measures are acceptable.

6.2.2 Class IE Electrical Supply Equipment

If the work package requires work around Class IE switchgear, load centers, motor control centers, inverters, or battery equipment, then caution notes shall be placed in the text of the work package. These notes should also explain any special requirements and/or work practices required to prevent accidental manipulation of breaker handles, switches, etc. A sign-off blank shall be provided for each affected work step for Operations concurrence that these requirements/practices are acceptable and that work may begin.

6.2.3 Switchyard, Transformer Yard, Isophase Bus

If the work package requires work around high voltage conductors or equipment, then caution notes shall be written into the text of the work package. These notes shall explain the potential for loss of off-site power. In addition, each work step (as applicable) should contain the requirement for a spotter person to ensure vehicles and/or equipment used in the work activity do not accidentally hit any high voltage equipment.

Also, Reference 3.1.4 requires that a special pre-job briefing be conducted prior to performing activities that cause personnel to be in proximity to energized high voltage conductors or equipment, and that a High Voltage Safety Checklist, Form 1000.128C, be filled out as part of this briefing.

6.2.4 Radiological Safety Evaluation

The following buildings have radiation monitoring systems for detecting radiation in their ventilation and drainage loops: Reactor Auxiliary Buildings, Reactor Auxiliary Extension Building, Low Level Radwaste Building, and Reactor Buildings. Any work outside these buildings require an evaluation to prevent the potential for Radiological Release.

If it is determined that a potential for Radiological Release exists, a specific Radiological Safety Evaluation (RSE) must be performed by Radiation Protection prior to performing that particular work activity. A positive response to Questions A AND B below OR a positive response to Question C below determines a RSE must be performed by Radiation Protection before the activity commences.

A. **Does the activity involve processing radioactive materials?** In this context, processing means any one of the following:

1. Removal of radioactive material from an installed plant component or system;

2. Solidifying, compacting, dewatering, concentrating, or sorting of radioactive solids, liquids or gases;

3. Any evolution that involves the disassembly of any component, system or piece of equipment known or suspected of containing radioactive material.

B. **Is any portion of the activity performed in areas other than the controlled Access areas of either unit's Auxiliary Building, Reactor Building or Low Level Radwaste Building?** The key factor is whether the liquid and gaseous effluents resulting from the activity will be released through un-monitored versus monitored pathways.

C. **If the proposed activity does not involve the processing of radioactive material but alters or modifies existing structures, systems or components, will any portion of the activity create the potential for an un-monitored release of radioactive material to the environment?**

6.2.5 ALARA Review

If a work package involves work activity within a Radiologically Controlled Area, the responsible Modification Engineer will involve the Modification ALARA Planners in the work planning process. The ALARA Planners will coordinate the development of the required Radiological Work Permit (RWP) and, if necessary, the ALARA planners will specify special precautions or additional work steps to be added to the work package

instructions to reduce personnel radiation exposure. The RWP number will be identified on the CWP Cover Sheet (Form 6030.005A)

6.2.6 Limited Condition of Operations (LCO)

When a work package involves work which necessitates that the plant enter an LCO Action Statement, then the applicable Technical specification and time limit shall be identified on the CWP Cover Sheet (Form 6030.005A). Also, the time the LCO was entered and the time the LCO was cleared shall be noted on the cover sheet.

6.2.7 Environmental Impact Review

If a work package involves work not covered by a design package or if a 10CFR50.59 review of the work package has not been performed the responsible Modification Engineer should consider the Environmental Impact of the activities associated with the work package. Use of the Environmental Checklist in the 50.59 review documents may be helpful in these considerations.

6.2.8 Infrequently Performed Tests or Evolutions (IPTE)

A work package shall be evaluated to determine if it constitutes an IPTE in accordance with Reference 3.1.5. If the work package is determined to be an IPTE, the instructions of Reference 3.1.5 shall be followed (this includes PSC review of the work package). Any additional controls needed because of the IPTE shall be incorporated into the appropriate parts of the work package.

6.2.9 Rigging

When the work activity involves rigging, as part of the constructibility walkdown process the Modification Engineer shall identify devices (gantries, lifting beams, lifting eyes, etc.) which may be used to lift or support the loads. These devices should be identified in the Instructions section of the CWP or job order. ~~Rigging of loads in excess of 2,000 lbs. shall be reviewed and supervised by an individual who has sucessfully completed the ANO Training Course AM-10300-002, Heavy Load Handling, or an approved contractor rigging training course.~~

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All riggings involving Non Standard lifts (as delineated in Reference 3.1.4) shall be performed per Reference 3.1.4.

If necessary, plant equipment may be used for rigging support subject to the following limitations and precautions:

A. The following equipment shall not be used for rigging support:

1. Cable Trays
2. Electrical Conduit or Junction Boxes
3. Electrical Panels
4. Motors
5. Pumps
6. Coils and Fans
7. Instrumentation (i.e., gauges or tubing)
8. Valves
9. Snubbers or Struts
10. 2" or smaller pipe

B. Safety-related piping shall not be used for rigging support unless the Modification Engineer has received approval from Design Engineering via the FCR process.

C. Authorization must be provided by the Modification Engineer before any plant equipment is used for rigging support. The authorization process shall be as follows:

1. The equipment shall be evaluated by the Modification Engineer to determine if it should be isolated or protected in some way.

2. An **APPROVED RIGGING FROM PLANT EQUIPMENT Tag** (green background with black lettering), signed by the Modification Engineer, shall be used to indicate approval of the equipment for use as a rigging support.

6.2.10 MOV WORK

All MOVs (and MOV schemes) modified by Modifications personnel shall be hold-carded during the modification. Work shall not be performed on MOV internal actuator components/wiring by Modifications personnel. External cabling terminated at an actuator, and MOVs not covered under the MOV Diagnostic Test Program are exempted from this prohibition.

Upon completion of installation activities, MOVs requiring post-modification testing shall have their hold cards transferred to, and solely held, by the Startup Engineering Supervisor (or designee). All modified MOVs shall be bumped for rotation (with deadman installed) if the modification could possibly cause reverse travel of the valve. Control of MOVs during post-modification testing is described in Reference 3.1.13.

6.2.11 WORK AREA

Special consideration should be given to the work area encompassed by the Work Package steps. The more areas the Work Package covers, the harder it is to ensure each craftsperson has a thorough understanding of his/her specific step and the required documentation to complete it and may require the use of multiple CWPs instead of one. Consideration should be given to the QC hold points contained in the CWP. A CWP containing many QC verifications/hold points may require separating it into multiple CWPs to ensure work flow is not interrupted during QC witness/inspection of those steps. QC shall, as a minimum be afforded the opportunity to view the CWP steps they are about to witness or verify. Also, special consideration should be given to the type of work covered by each step in the CWP. For work activities that require step by step sequential work instructions then the CWP containing those work steps shall be at the job site and should be on a stand alone CWP.

6.2.12 Work On Non Isolated Systems

When systems or components are to be worked in a non isolated state, i.e. energized, pressurized etc. then the ME shall evaluate the work activity and add any special precautions, notes, authorizations, coordination events, etc. in the work instructions to ensure the work is performed in a safe manner

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6.3 CWP DEVELOPMENT

NOTE

With reference to the following instructions, when the CWP involves a startup-related activity, the Startup Supervisor will serve the function of the Modification Supervisor and the Startup Engineer will serve as the Modification Engineer

6.3.1 MPs will be assigned by the responsible Modification Superintendent to individual Modification Supervisors for implementation.

6.3.2 The Modification supervisor or designee shall perform the following:

A. Review the MP to determine the scope of the task.

B. Verify that the MP defines the safety classification of the work to be done.

C. Check attachments and review the necessary reference documents to determine if adequate information has been provided to complete the task.

D. Assign Modification Engineer(s) to develop the required CWP(s) and to coordinate and oversee the associated work efforts.

6.3.3 A MP may be divided into a number of CWPs in order to accommodate work by multiple crafts/shops or to facilitate the management and control of the overall work effort. When this is done, the Modification Supervisor shall ensure that the overall work effort is coordinated among the different Modification Engineers involved in the implementation of the MP, and that the sum total of the CWPs equals the entire work scope of the MP.

6.3.4 Work Planning

In preparation for the development of a CWP, the responsible Modification Engineer will conduct a thorough review of the associated MP and will perform the following activities:

A. Conduct a constructibility walkdown to determine the work scope, identify interferences and verify as-found configurations, and coordinate the resolution of discrepancies with the responsible Design Engineer.

B. Identify any special conditions applicable to the work activity which need to be addressed in the CWP including:

1. Any prerequisites, precautions or special requirements including those identified in Section 6.2.

2. Applicable construction codes and standards.

3. Vendor or catalog instructions.

4. Specific inspections and/or acceptance criteria (i.e., ASME, Section XI, IEEE).

5. Circumstances that may require special consideration for personnel or equipment safety.

6. Special work practices which may be required due to space considerations or to the work environment in general.

7. The need for a CWP controlled copy for work in a contaminated area.

C. Review the work scope with the Modification Supervisor, the Craft Supervisor, and Quality Control (if required).

D. Identify work sequencing requirements if applicable.

6.3.5 Each CWP shall be assigned a unique identification number by Modifications Central Files consisting of (1) the MP number (if applicable), (2) the associated job order number, and (3) a numerical suffix (to distinguish between multiple CWPs associated with the same MP/JO).

CWPs for startup activities will include an "S" after the numerical suffix to differentiate them from installation CWPs.
(Example: 91-0153 / 99770778 - 1S)
(MP) (JO)

6.3.6 A CWP shall contain information necessary to perform, inspect and document a specific task or series of tasks and it shall satisfy the requirements of codes and standards applicable to the work activities. The information in each CWP is presented so it can be

used to control the work and monitor its progress. This work should be defined in a manner consistent with normal installation practices and schedule based on the type of work to be accomplished. This work shall be defined in such a way as to ensure the safe operation of the plant.

6.3.7 Each CWP shall include the following:

A. A CWP Cover Sheet (**Form 6030.005A**)

B. A written narrative consisting of four sections - DESCRIPTION OF WORK, REFERENCES/ENCLOSURES, PREREQUISITES, and WORK INSTRUCTIONS - prepared in accordance with the format and content guidelines included in Attachment 1.

C. Enclosures including the necessary permits, weld packages, approval forms, and copies of documents from the associated MP which are required to perform the identified work activities. Exceptions, such as weld packages not available at the time the CWP is issued, shall be documented by memorandum to Central Files by the responsible Modification Engineer.

6.4 CWP PROCESSING

6.4.1 Each CWP shall be reviewed by the responsible Modification Engineer, Modification Supervisor and Craft Supervisor. In addition, CWPs involving Q, EQ, II/I Seismic, F-Listed work, or Code welding shall be submitted to Quality Engineering for reviews.

6.4.2 Responsibilities of required reviewers will include the following:

A. Modification Engineer

As the primary reviewer, the Modification Engineer shall verify that the work to be accomplished is within the scope of the applicable activity in the Installation Plan and meets the Engineering requirements contained in the specification, procedures and drawings. The Modification Engineer shall review the overall CWP to ensure that work steps also satisfy Independent Verification requirements identified in the Installation Plan.

B. Modification Supervisor

The Modification supervisor shall review the overall package for work scope, constructibility and conformance to the administrative requirements of this procedure.

C. Quality Control/Quality Engineering

Quality Engineering will review the CWP in accordance with the requirements of Quality control procedures and include Hold Points and or Hold Final Points within each applicable work step. Statements/comments to explain the inspection criteria should also be included.

D. Craft Supervisor

The Craft Supervisor will review work steps for constructibility and content adequacy and ensure that all required documentation for installation is incorporated into the CWP (i.e., Weld Package, Core Drill Approval Forms, etc.). The Craft Supervisor shall also review the CWP for special processes and/or conditions to ensure personnel plant safety.

6.4.3 Review and approval of the CWP shall be documented by signature and date on the CWP Cover Sheet, **Form 6030.005A.** If Quality Engineering (QE) review is not required, the Modification Engineer will put "N/A" in the QE signature blocks in the Review/Approval and Final Quality Documentation Review sections of the coversheet. Dependent upon the CWP content, the Modification Supervisor may identify additional reviewers to ensure that the CWP complies with the requirements of the MP.

6.4.4 After the associated job order has been signed by the Responsible Organization Supervisor providing the clearance required to begin work, the Modification Engineer will sign the appropriate block on the CWP Cover Sheet.

6.4.5 With the CWP approved and the clearance obtained to begin the work, the Modification Engineer will deliver the CWP to Modifications Central File for control and issuance.

6.4.6 In accordance with **Reference** 3.1.7, Modifications Central File will ensure that the associated MP has been approved for installation before making the required Test Copy documents and issuing the CWP to the responsible Craft supervisor for implementation. However, if schedule requirements dictate, certain pre-installation activities may be performed before the

MP has completed the review and approval process by issuing a PREFAB ONLY CWP as outlined in Section 6.7.

6.5 CWP INSTALLATION

6.5.1 Prior to issuing the CWP to the field, the Craft Supervisor shall conduct a pre-installation review of the CWP with the crafts persons who will be performing the work. This review shall cover the work steps, drawings, applicable procedures, and any special conditions/prerequisites/precautions included in the CWP. QC, ANI, Section XI, or Independent Verification inspections shall also be reviewed and discussed.

After this review has been completed, the Craft Supervisor will sign the CWP Cover Sheet in the space provided.

The Craft Supervisor shall ensure each crafts person knows the location of the CWP containing their work steps and has the necessary enclosures to perfcrm their work.

6.5.2 Prior to commencing a work activity which requires system/equipment isolation, the Craft Supervisor and the Modifications Engineer shall together verify that the Hold Cards have been properly placed. This verification shall consist of a visual inspection of all hold cards within the System/Equipment isolation boundaries and a check of the Hold Card Log to ensure that the necessary components have been Hold Carded. Special Care shall be taken to ensure that any components (i.e. vent/drain/valves) that are included in the work scope, have had their hold cards removed prior to beginning work.

PC-4 | See Foot note Below:
If caution cards are posted due to special conditions that require an increased awareness of equipment status, the same verification requirements apply as noted above for Hold Cards.

The visual inspection of Hold Cards/Caution Cards by the Craft Supervisor and the Modifications Engineer may be waived for portions of systems within a high radiation area, when this presents an ALARA concern.

6.5.3 Only these activities described in the CWP work instructions may be performed. Incidental activities within the boundaries of a particular work step - such as removing and re-installing access covers, labeling, etc. - are considered part of the work steps and do not require specific instructions in the CWP, but work outside of these boundaries shall not be performed.

PC-4 | Foot note: If for any reason the isolation boundary is changed then the new boundary shall be reviewed and verified just as the orisinal isolation boundary.

6.5.4 If noted by a statement in the CWP that the actual sequence of work described may be altered to suit prevailing conditions/schedule and cost effectiveness in manpower utilization but within the limits of the Installation Plan, then the work steps may be worked in any sequence. If no statement is given, then the work steps shall be performed in the given sequence.

6.5.5 The Craft Supervisor is responsible for notifying the applicable station authority when dictated by a work step in the CWP or the procedure applicable to that work step.

6.5.6 The Craft Supervisor is responsible for ensuring all applicable procedure forms are properly filled out and signed-off.

6.5.7 If the CWP contains step by step sequential instructions, then the CWP shall be at the job site. In any case, the CWP location shall be within the work area(s), and all persons performing work to the CWP shall know its location, and have access to it.

6.5.8 If the work area is in a Radiological Controlled Area and contamination of the CWP is probable, then a controlled copy of the CWP may be issued by Modification Central File Personnel to be used at the work area. Typically, a CWP Controlled Copy will only be used inside of the Reactor Building.

6.5.9 If, during the implementation process, a discrepancy is found between the controlling documents and the actual field condition, the responsible Modification Engineer shall be contacted and the work associated with the discrepancy shall be stopped until an Engineering evaluation has been made and authorization received to continue the work.

6.5.10 When initialed and dated by the Craft Supervisor and Modification Engineer, Performance signifies that the work has been completed and that the performance represents the "as-constructed" condition of the installation in accordance with the latest Test Copy documents and drawings.

6.5.11 QC Hold Points require the presence of a QC Inspector prior to starting the work step. QC Hold Final requires a QC inspection after the work is complete (but before covers are installed, painting is released, etc.). In either case, initial and date by a QC Inspector signifies the work he/she inspected complies with pre-established acceptance criteria (established by Quality Engineering) and is complete in accordance with the requirements established through the QC Operating procedures.

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6.5.12 For CWPs involving Q, EQ, II/I Seismic, F-List, or Code welding, the Modification Engineer will notify Quality Control when the work has been completed, and prior to removal of the associated job order from the Control Room. Quality Control will review the CWP documentation and if found acceptable, will sign the Final quality Documentation Review block of the CWP Coversheet. This review shall take place before the MP close out is complete.

6.5.13 For CWPs involving Code welding, the Modification Engineer should ensure the weld package documentation is reviewed by the Engineering Welding coordinator prior to turnover.

6.5.14 When the CWP work activity has been completed and documented, the CWP will be returned to Modifications Central File for subsequent closeout.

6.5.15 Material Traceability

A. The following items except for those items described in Sections B and C shall have material traceability accomplished by transferring heat numbers or other identification on the materials[1] in order to meet specified code criteria:

> **NOTE**
> The material heat number or other identification shall be transferred before material is divided. QC shall verify heat number transfer.

1. All pressure retaining parts, components, and piping systems including their supports used in ASME Section III, Class 1, 2, 3, MC, and NF components.

2. The following ANSI B31.1. systems in Unit 1 maintained as ASME Class 3; Emergency Feed water, Service Water, Spent Fuel Cooling, Sodium Hydroxide, and Reactor Building Spray.

3. ANSI B31.1 systems within line classes DBD and EBD for Unit 1 and 2 DBD and 2 EBD for Unit 2 that are classified as critical piping. CRITICAL PIPING MATERIALS 1" NOMINAL PIPE SIZE AND LESS (PIPING AND TUBING AND ASSOCIATED FITTINGS, FLANGES, VALVES AND SUPPORTS) ARE EXEMPT FROM MATERIAL TRACEABILITY REQUIREMENTS. SEE REF. 3.1.14 FOR ADDITIONAL DETAILS.

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B. The following items shall have material traceability accomplished by entering heat numbers or other identification (Purchase Order No., etc.) on the material ticket or other quality records traceable to the item (heat numbers or other traceable identification may be transferred on the material without requiring QC verification):

1. ASME Section III materials received with a C of C in lieu of a CMTR for material 3/4" nominal pipe size and less (pipe, fittings, flanges, materials for valves and tubes except heat exchanger tubes); bolting 1" nominal diameter and less; and bars with a nominal cross-sectional area of 1 sq. in. and less).

2. All non-ASME structural steel materials used for Seismic Category I applications.

C. The following items do not require material traceability;

1. All pressure-retaining parts, components, and piping systems not described in 6.5.15 A and B.

2. All non pressure-retaining parts not described in 6.5.15 A and B.

3. All structural steel materials used for non-seismic applications.

D. Material traceability for shims shall be subject to the same requirements as imposed on the associated support/component.

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[1] Except as required by the material specifications, bolts and nuts 1" nominal diameter and smaller and other products where the largest space available for marking is less than 1" in any direction need not be individually marked (stamped). Tags or containers adequately marked for traceability to the CMTR or C of C shall be used.

6.6 CHANGES TO APPROVED CWPs

After a CWP has been approved and released for work, changes to the package may be made in one of three ways: (1) a pen and ink change to the narrative section of the CWP, (2) the issuance of an FCR against one or more of the design documents included in the CWP, or (3) the issuance of a CWP Change Notice. The requirements and limitations associated with each of these change methods are outline below:

6.6.1 Pen and Ink Changes

A. Pen and ink changes can be made to the narrative section of the CWP to incorporate minor changes that do not change the intent or scope of the work activity. Examples include the correction of typographical errors or adding a drawing that is referenced in one of the work steps to the CWP Reference/Enclosure list.

B. The Modification Engineer shall initial and date each pen and ink change.

C. If a CWP Controlled copy has been issued, the Modification Engineer shall insure that both the CWP original copy as well as the CWP controlled copy reflect any changes.

6.6.2 Field Change Request FCR)

A. When an FCR is initiated against a design document that has been issued as an enclosure to a CWP, the Modification Engineer shall determine if the FCR affects the work instructions included in the CWP narrative.

B. If the FCR does not affect the CWP work instructions, the FCR may be issued for implementation without a CWP Change Notice.

C. If the CWP work instructions must be changed as a result of the FCR, a CWP Change Notice shall be used to incorporate the FCR and the revised work instructions into the CWP.

6.6.3 CWP Change Notice

A. Except for the situations identified in Sections 6.6.1 and 6.6.2 above, a CWP Change Notice shall be used to incorporate a change to a CWP.

B. The Change Notice shall consist of a CWP Change Notice Cover Sheet (**Form 6030.005B**), together with the revised narrative and/or enclosures.

C. Each Change notice shall be sequentially numbered by Central Files and processed in the same manner as the original CWP (see Section 6.4).

However, if the Change Notice does not impact the scope or intent of the original CWP, the review and approval cycle may be shortened to include only the Modification Engineer and Modification supervisor. When this is the case, the Modification Engineer will write "N/A" in the remaining signature blocks on the CWP Cover Sheet.

6.7 PREFAB ONLY CWPs

When schedule requirements dictate, the Modification Manager may authorize prefabrication work and anchor bolt placement activities associated with a particular MP to be performed before the MP has been approved for installation. This shall be done through the development and issuance of a Prefab Only CWP. The following special controls shall apply when work is performed under a Prefab Only CWP.

6.7.1 The CWP Cover Sheet and the attached drawings which will be used to perform the work activity shall each be stamped: "PREFAB ONLY".

6.7.2 The Modification Manager shall indicate approval to proceed with the work by signing the appropriate block of the CWP Cover Sheet.

6.7.3 Unless accessibility conditions preclude the walkdown, a Prefab Only CWP should not be issued until a constructibility walkdown has been performed and a constructibility Walkdown Form has been signed by Design Engineering or Modifications, and the Craft Supervisor.

6.7.4 When the Prefab only CWP involves the fabrication of components or sub-assemblies, the following controls shall apply:

A. The prefabricated components shall be tagged and stored in accordance with **Reference** 3.1.10.

B. Prior to installation in the plant, the component or sub-assembly shall be inspected against, and reconciled with, the Test Copy of the associated design document.

This inspection shall be performed by the responsible Modification Engineer and the inspection activity shall be identified and documented by a separate work step in the installation CWP.

6.7.5 When the Prefab Only CWP involves anchor bolt placement activity (i.e., drilling/chipping concrete and setting anchor bolts), the following controls shall apply:

A. The work shall be performed in accordance with **References 3.1.2, 3.1.11, and 3.1.12.**

B. The as-built condition of the anchor bolt pattern shall be reconciled with the Test Copy of the associated design document (by issuance of a DCPR or FCR, as necessary) prior to the baseplate final inspection.

7.0 ATTACHMENTS AND FORMS

7.1 ATTACHMENTS

7.1.1 Attachment 1 - Format and Content Guidelines for CWP Narrative

7.2 FORMS

> NOTE
> These forms may be computer-generated and the format altered, as required.

7.2.1 Form 6030.005A, CWP Cover Sheet

7.2.2 Form 6030.005B, CWP Change Notice Cover Sheet

ATTACHMENT 1

CWP NARRATIVE - FORMAT AND CONTENT GUIDELINES

[The CWP narrative shall consist of four sections - (1) Description of Work, (2) References/Enclosures, (3) Prerequisites and Precautions, and (4) Work Instructions. Guidelines regarding the information to be included in each section are provided below. The narrative pages shall be consecutively numbered and each page shall include a heading which identifies the CWP number (and the CWP Change Notice number, if applicable) and the page number (Page ____ of ____).]

1.0 DESCRIPTION OF WORK

This section should provide a concise summary statement of the work to be accomplished in the CWP. Any special tools or equipment not readily available should be listed. Specific plant areas (i.e., Reactor building, Turbine Building, Control Room) should be listed. If the CWP is discipline-specific, that craft should also be listed.

2.0 REFERENCES/ENCLOSURES

This section shall provide a listing of documents included in the CWP and references to the applicable governing specifications, procedures, etc., for the work. Some of these documents may be required to be at the job site because they contain information or data necessary to perform, inspect or document the actual work. When a portion of the CWP work activity involves a special process, the procedure or portion of the procedure applicable to the activity should be included as an enclosure.

3.0 PREREQUISITES AND PRECAUTIONS

This section should contain an itemized listing of the conditions that must be satisfied prior to starting the actual work and any special precautions related to the overall work effort. This would include such items as:

3.1 Tagging isolations.

3.2 Special permits and approvals.

3.3 Any of the prerequisites/precautions identified in Section 6.2 of this procedure.

3.4 Special conditions, requirements or prerequisites identified in the Installation Plan.

3.5 Special training requirements and personnel qualifications.

4.0 WORK INSTRUCTIONS

This section shall include step-by-step instructions for the performance, inspection and documentation of the CWP work activity. Judgement must be exercised as to the quantity of work that is to be accomplished in each step: however, in general, the breakout of work steps should be consistent with normal installation practices and defined in sufficient detail to ensure personnel and plant safety.

The work instructions may be divided into sections (A, B, C...) if necessary or desirable. Work steps shall be numbered consecutively (1, 2, 3...) within each section. If the sequence of performance of various sections or steps can be altered (to suit plant conditions, facilitate effective manpower utilization, etc.), a statement should be included in the work instructions which clearly spells this out. If no such statement is provided, the work must be performed in the identified sequence.

Each work step shall include sign-off blocks to be initialed and dated by the responsible individual following completion of that work step. As a minimum, each work step shall be signed-off by the Craft Supervisor and Modifications Engineer. In addition, sign-off blocks shall be provided for QC and ANI inspections where required. In these cases, the work instructions must be clear as to whether the inspector is to be notified before or after, the completion of the work step. For example, QC Hold Points require the presence of a QC Inspector prior to starting the work step, while QC Hold Final requires a QC inspection after the work is complete (but before covers are installed, painting is released, etc.). Also, Independent Verification (IV) of work steps by the Modification Engineer or designee shall be specified in the work instructions where required by **Reference 3.1.1** or when proper completion of a particular work step cannot be verified by the Modification Engineer during his/her final inspection of the completed installation.

In addition to the general requirements identified above, the following specific information shall be included in the work instructions where applicable:

A. A work step shall be included for verification by the Craft Supervisor directing the work activity that the required Hold Cards and/or Caution Cards have been verified (see Section 6.5.2).

B. For work activities that require ASME Section XI inspections, examinations or testing, a step shall be included in the CWP to ensure those examinations, inspections or tests were completed.

C. Specific notes or cautions for a particular work step shall be inserted or referenced in the step. The special work practices and/or work requirements identified in Section 6.2 shall be identified in the applicable work steps when the activity involves:

1. Working in the Switchyard, Transformer Yard, or Isophase Bus;

2. Working around Class 1E electrical supply equipment;

3. Working which would place the plant in a Limiting Condition of Operation (LCO).

4. Working on equipment that is listed in Attachment B of **Reference 3.1.6** during RCS reduced inventory conditions.

Conditions 2, 3, or 4 above require Operations concurrence before these steps can be started and a signature block shall be provided in the work instructions to document this concurrence.

D. Independent Verifications which have been identified shall be listed as separate work steps in the CWP.

E. A space to record pre-torque and post-torque results should be placed into each work step requiring the use of a torque wrench.

F. If CWP work activities have been determined to be an IPTE and precautionary/compensatory actions are specified, these shall be included as individual steps in the CWP.

CWP # ____-_____/_____-____ ☐ Controlled Copy Page 1 of ____
TITLE: _____
WORK SUMMARY: _____

Work Classification [Check appropriate box(es)]

☐ Q ☐ II/I Seismic ☐ Startup Related

☐ Non Q ☐ Fire Protection ☐ Tech. Spec. (LCO)

Applicable Codes/Standards: _____

PREREQUISITES

Hold Cards Req'd: |___| YES |___| NO RWP Req'd: |___| YES |___| NO RWP#_____

Special Requirements: _____

REVIEW/APPROVAL:

Prepared by: _____/_____
Modification Engineer Date

Reviewed by: _____/_____ _____/_____
Craft Supervisor Date Quality Engineer Date

_____/_____ _____/_____
Mods ALARA Planner Date Date

Approved by: _____/_____
Modification Supervisor Date

WORK RELEASE

J.O. signed-in by Responsible Organization/Hold Tags Posted (if required)

_____/_____
Modification Engineer Date

If the CWP involves a Unit Technical Specification Limiting Condition of Operation (LCO), the Modification Engineer shall complete the following:

Tech. Spec. #_____Time Limit _____Time Limit Starts_____Time Limit Ends_____

Pre-Installation Review Completed: _____/_____
Craft Supervisor Date

FINAL QUALITY DOCUMENTATION REVIEW
(For CWPs involving Q, EQ, II/I Seismic, F-List, or Code Welding)

_____/_____
Quality Control Date

Entergy Operations

ENTERGY OPERATIONS INCORPORATED
ARKANSAS NUCLEAR ONE

Page ___ of ___

CN #_____ TO CWP #____-_____/_____-____

DESIGN CHANGE? YES ☐ NO ☐ REFERENCE: _____

CONTROLLED COPY ☐

REASON FOR CHANGE: _____

DESCRIPTION OF CHANGE: _____

ENCLOSURES:

REVIEW/APPROVAL

Prepared by: _____ / _____
Modification Engineer Date

Reviewed by: _____ / _____
Craft Supervisor Date

_____ / _____
Quality Engineer Date

Approved by: _____ / _____
Modification Supervisor Date

Pre-Installation Review Completed: _____ / _____
Craft Supervisor Date

4.0 WORK INSTRUCTIONS

This section shall include step-by-step instructions for the performance, inspection and documentation of the CWP work activity. Judgement must be exercised as to the quantity of work that is to be accomplished in each step; however, in general, the breakout of work steps should be consistent with normal installation practices and defined in sufficient detail to ensure personnel and plant safety.

The work instructions may be divided into sections (A, B, C...) if necessary or desirable. Work steps shall be numbered consecutively (1, 2, 3...) within each section. If the sequence of performance of various sections or steps can be altered (to suit plant conditions, facilitate effective manpower utilization, etc.), a statement should be included in the work instructions which clearly spells this out. If no such statement is provided, the work must be performed in the identified sequence.

Each work step shall include sign-off blocks to be initialed and dated by the responsible individual following completion of that work step. As a minimum, each work step shall be signed-off by the Craft Supervisor or Foreman. In addition, sign-off blocks shall be provided for QC and ANI inspections where required. In these cases, the work instructions must be clear as to whether the inspector is to be notified before or after the completion of the work step. For example, QC Hold Points require the presence of a QC Inspector prior to starting the work step, while QC Hold Final requires a QC inspection after the work is complete (but before covers are installed, painting is released, etc.). Also, Independent Verification (IV) of work steps by the Modification Engineer or designee shall be specified in the work instructions where required by Reference 3.1.1 or when proper completion of a particular work step cannot be verified by the Modification Engineer during his/her final inspection of the completed installation.

In addition to the general requirements identified above, the following specific information shall be included in the work instructions where applicable:

A. A work step shall be included for verification by the Lead Craftsman directing the work activity that the required Hold Cards and/or Caution Cards have been posted (see Section 6.5.2).

B. For work activities that require ASME Section XI inspections, examinations or testing, a step shall be included in the CWP to ensure those examinations, inspections or tests were completed.

6.5.5 The Craft Supervisor is responsible for notifying the applicable station authority when dictated by a work step in the CWP or the procedure applicable to that work step.

6.5.6 The Craft Supervisor is responsible for ensuring all applicable procedure forms are properly filled out and signed-off.

6.5.7 If the CWP contains step by step sequential instructions, then the CWP shall be at the work area. In any case, the CWP location shall be near the work activity(s), and all persons performing work to the CWP shall know its location, and have easy access to it.

6.5.8 If the work location is in a Radiological Controlled Area and contamination of the CWP is probable, then a controlled copy of the CWP may be issued by Modification Central File Personnel to be used at the worksite. Typically, a CWP Controlled Copy will only be used inside of the Reactor Building.

6.5.9 If, during the implementation process, a discrepancy is found between the controlling documents and the actual field condition, the responsible Modification Engineer shall be contacted and the work associated with the discrepancy shall be stopped until an Engineering evaluation has been made and authorization received to continue the work.

6.5.10 When [redacted] work has been completed and [redacted] "as-[redacted] condition of the [redacted] in accordance with the latest Test Copy [redacted].

6.5.11 QC Hold Points require the presence of a QC Inspector prior to starting the work step. QC Hold Final requires a QC inspection after the work is complete (but before covers are installed, painting is released, etc.). In either case, initial and date by a QC Inspector signifies the work he/she inspected complies with pre-established acceptance criteria (established by Quality Engineering) and is complete in accordance with the requirements established through the QC Operating procedures.

6.5.12 For CWPs involving Q, EQ, II/I Seismic, F-List, or Code welding, the Modification engineer will notify Quality Control when the work has been completed, and prior to removal of the associated job order from the Control Room. Quality Control will review the CWP documentation and if found acceptable, will sign the Final Quality Documentation Review block of the CWP Coversheet.