

ENGINEERING CHANGE REQUESTS

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1.0 SCOPE

- 1.1 This procedure delineates the requirements for initiation, resolution, approval, implementation and closeout of Engineering Change Requests (ECRs). An ECR provides a method of documenting the justification for revisions to working drawings, specifications, SPEEDS, or other approved design documents, and provides a method for resolution of requests for design changes necessary during installation or startup of new or modified equipment or systems. Any design performed as a part of the resolution to an ECR shall be performed in accordance with NP 7.2.2, Design Control. The ECR procedure shall not be used in place of a condition report.
- 1.2 An ECR is required when a design document that has already received final design approval needs revision. An ECR is intended to document the change, and the reasons for the change, of an active design document. An ECR shall not be used to document changes to an installed design except as noted below. The Project Manager (PM) may use an ECR at their discretion to document changes to a design prior to final design approval.
- 1.3 An ECR may be issued for an installed design, indicated by acceptance of the MR or SPEED, for the following circumstances:
- 1.3.1 The system or component has been conditionally accepted pending resolution of the problem or change identified by the ECR;
  - 1.3.2 The purpose is to document the as-built condition of the modification; or
  - 1.3.3 The purpose is to address problems related to the modification that were identified after modification acceptance.
- 1.4 Use of ECRs for design changes should be used for all plant modifications where working drawings are required. However, ECRs may be used for other design changes at the PM's discretion. ECRs shall be used if the design change affects nuclear safety.
- 1.5 Signature authority can be delegated for Group Head approval in accordance with AM 4-1, Signature Delegation. This signature can be on generic basis (Group Head approval delegated to certain individuals for any ECRs) or may be on a project-specific basis.

2.0 REFERENCES

- 2.1 NP 1.4.1, Working Drawing System
- 2.2 NP 1.4.2, Permanent Drawing System
- 2.3 NP 1.4.3, Drawing Change Notice Procedure



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- 2.4 NP 1.7.7, Safeguards Information
- 2.5 NP 7.2.1, Plant Modifications
- 2.6 NP 7.2.2, Design Control
- 2.7 NP 7.2.6, Engineering Change Process
- 2.8 NP 9.3.3, Spare Parts Equivalency Evaluation
- 2.9 NP 10.3.1, Authorization of Changes, Tests, and Experiments (10 CFR 50.59 and 72.48 Reviews)
- 2.10 AM 4-1, Signature Delegation
- 2.11 PBF-1591, Engineering Change Request
- 2.12 ANSIN45.2.11-1974, Quality Assurance Requirements for the Design of Nuclear Power Plants
- 2.13 Updates to this procedure covered by existing SCR 99-0311

### 3.0 PROCEDURE

**NOTE:** The requirements of Steps 3.2.1.f, 3.2.2.a, and 3.2.3 do not apply to ECRs for Non-QA design changes. While not required, review of ECRs for Non-QA design changes as per Step 3.2.1.f is recommended.

#### 3.1 Initiation

- 3.1.1 Wisconsin Electric or contractor project personnel may initiate an ECR to request a change to approved design documents.
- 3.1.2 The initiator shall enter the following information on Form PBF-1591, Engineering Change Request.
  - a. Project Manager (PM) for the modification request or other design document affected.
  - b. Identification number of the modification request (design package if applicable), Temporary Modification, or other design document.
  - c. QA scoping of the design change, if known. (For instructions regarding the determination of the QA scoping of a design change, refer to the "Procedure" section of NP 7.2.6, Engineering Change Process).

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- d. Anticipated document updates required must be implemented in accordance with existing procedures for changing those documents.
- e. List reference documents that help describe the condition of the problem.
- f. Full problem description and a proposed resolution.
- g. Initiator's name and date.

**NOTE: Required approval signatures may be obtained by telephone. All such approvals by telephone shall be clearly identified, initialed, and dated on ECR Form PBF-1591.**

3.1.3 The ECR is forwarded to the PM. The PM will review the ECR and assure that the ECR is required. In many cases, the PM may be aware of information that is not readily available to the initiator which may result in changing or not needing the ECR.

3.1.4 If preliminary approval is not required, proceed to Step 3.1.6. If preliminary approval is required to maintain continuity of field work, forward the ECR to the PM. The preliminary resolution should include a list of documents that will be affected by the ECR, to aid in the distribution of the preliminarily approved ECR. The PM shall obtain preliminary review/approval as necessary from their group head.

3.1.5 Group Head Preliminary Approval

- a. Preliminary approval may be based on quick, informal calculations, engineering judgement, experience, or other justification for believing the proposed resolution to be workable. Formal resolution of the ECR shall be included in all cases where preliminary approval is granted.

**NOTE: The group head may delegate preliminary approval signature authority per Step 1.5.**

- b. Preliminary approval is allowed provided the change is reversible if subsequent analysis shows the original resolution is unacceptable. Preliminary approval is not sufficient for the installed change to be accepted. The resolution shall be finalized before the installation can be accepted.

c. Preliminary Approver:

1. Should determine if the proposed resolution is reasonable and appropriate.

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2. Shall verify that the proposed change will not affect a currently operable system, structure, or component.
  3. Should verify that the proposed change is reversible or augmentable if subsequent calculations, analyses, or final resolution do not support the proposed change.
  4. Should indicate on ECR Form PBF-1591 the scope of work for which preliminary approval is granted, and the basis.
  5. Shall sign and date ECR Form PBF-1591 granting preliminary approval of the ECR.
- 3.1.6 The ECR, including any attachments, shall be forwarded to drawing control personnel.
- 3.1.7 Drawing control personnel shall enter the applicable information in the ECR database, assign an ECR number, retain a copy, forward a copy to all controlled holders of the affected documents that the ECR is posted to, forward a copy to opposite location drawing control personnel, and forward the original ECR to the PM for resolution. If the ECR has been preliminarily approved, copies of the ECR shall be distributed per Step 3.2.5.

3.2 Resolution

Resolution of ECR would normally be by the design organization responsible for the original design. However, Wisconsin Electric may perform the resolution or assign the resolution to a contractor organization, if Wisconsin Electric has accepted the original design.

**NOTE: Resolution of the ECR must be completed (through Group Head Approval) prior to acceptance of the design change.**

- 3.2.1 The resolver:
- a. Shall determine the QA scoping of the design change and indicate it on ECR Form PBF-1591, or verify the QA scoping determination done previously.
  - b. Shall resolve the ECR and document the resolution on ECR Form PBF-1591. Design changes shall be performed in accordance with NP 7.2.2, Design Control.
  - c. Shall attach any supporting documentation (sketches, ECR justification) to the ECR and number all pages.

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- d. Shall list on the ECR Form PBF-1591 (in the Document Update Required section), or an attachment if necessary, all documentation that must be updated to incorporate the resolution of the ECR. Although documented on the ECR, changes to the permanent documents must be implemented in accordance with existing procedures for changing those documents.
- e. Shall review the Document Update Checklist for any revisions required due to the ECR, and revise the Document Update Checklist as necessary.
- f. Shall review the 10 CFR 50.59 and 72.48 evaluations/screenings prepared for the original design. If any portion of the original 10 CFR 50.59 and 72.48 evaluation/screenings need to be changed as a result of the ECR, the corresponding "Yes" box on ECR Form PBF-1591 shall be checked and the original 10 CFR 50.59 and 72.48 evaluations/screenings shall be revised in accordance with NP 10.3.1, Authorization of Changes, Tests, and Experiments (10 CFR 50.59 and 72.48 Reviews), and attached to the ECR.
- g. Shall review the design verification prepared for the original design. This review is done as an aid to ensure that all aspects of the design change have been considered in the ECR. If the review indicates that the original design verification is impacted by the ECR, check the corresponding "Yes" box on the ECR Form PBF-1591, otherwise check "No." If checked "Yes", a revised Design Verification (PBF-1583) shall be completed and attached to the ECR.
- h. Shall have the ECR technically reviewed in accordance with NP 7.2.2. The technical reviewer shall sign and date the ECR indicating the resolution is technically adequate.
- i. Shall sign and date the ECR and forward the ECR to the PM.

**3.2.2 The PM:**

- a. Shall determine if QA review is required. QA review may be required if QA materials are altered, different procedures are used, NDE requirements are changed, etc. If QA review is required, the QA reviewer shall sign and date the "Additional Reviews" box on ECR Form PBF-1591 upon completion of the review.
- b. Shall obtain additional reviews as required. Reviews by other affected groups may be required if the ECR results in a significant change to the original design. A change is considered significant if it affects the operability or maintainability of the design, or if it conflicts with design standards or criteria committed to the NRC. Additional reviewers shall sign and date the "Additional Reviews" box on ECR Form PBF-1591

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upon completion of their reviews.

- c. Shall sign and date the "Project Manager Review" box on ECR Form PBF-1591 and forward the ECR to their group head.

**NOTE:** Required approval signatures may be obtained by telephone. All such approvals by telephone shall be clearly identified, initialed, and dated on ECR Form PBF-1591.

3.2.3 The group head shall verify that the requirements of Section 3.2 have been completed, sign and date the ECR, and forward the ECR to drawing control personnel.

3.2.4 Revisions to ECRs

- a. If minor administrative changes are required to an ECR, the PM shall note, initial, and date these changes on the ECR. A copy of this changed ECR shall be submitted to drawing control personnel. Examples of minor changes include typographical errors, problem description, verification, or document updates/reference section changes.
- b. If major changes are required to the ECR, a new ECR shall be initiated. Major changes are any changes not listed above.

3.2.5 Drawing Control Personnel shall:

- a. Update the ECR database.
- b. Send a copy of the ECR to controlled holders of the drawings listed in the "Documentation Updates Required" section of the ECR.
- c. Update the file copy.
- d. Forward a copy to opposite location drawing control personnel.
- e. Forward a copy to other personnel as indicated by the Project Manager.
- f. Enter the ECR number on appropriate working drawing aperture cards.
- g. Forward the original ECR to the PM.

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3.3 Closeout

3.3.1 The PM shall:

- a. Verify that the approved resolution has been properly implemented and documented.
- b. Verify that all documentation changes have been incorporated.
  1. If the working drawing(s) listed on the ECR are going to be transferred into the permanent drawing system, all updates/changes shall be incorporated onto the drawing(s) and the ECR number written in the revision block prior to being transferred. The permanent drawing number given to these transferred drawings shall be written on the ECR next to the working drawing number.
  2. If the ECR is to change information on working drawings which have a related as-built permanent drawing, a drawing change notice (DCN) shall be initiated. The DCN number shall be written on the ECR next to the working drawing number it corresponds to. The DCN shall reference the ECR number from which it was written.
  3. If the working drawing(s) listed on the ECR are going to be voided with the ECR changes not incorporated, this must be noted in the "Document Updates Required" section of the ECR.
  4. The document update description (i.e., Rev. 5, Incorporation Not Required) shall be noted in the Incorporation/Remarks section.
  5. Verify that the ECR has been referenced in the design document.
- c. Sign and date the ECR indicating that implementation is complete.
- d. Forward the ECR to drawing control personnel.

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3.3.2 Drawing control personnel shall:

- a. Ensure all documentation updates have been incorporated.
- b. Update the ECR database.
- c. Send a copy of the completed ECR to the PM.
- d. Forward one copy to opposite location drawing control personnel.
- e. Forward the original ECR to PBNP Nuclear Information Management for filing.

3.4 Cancellation

To cancel the ECR, the PM shall:

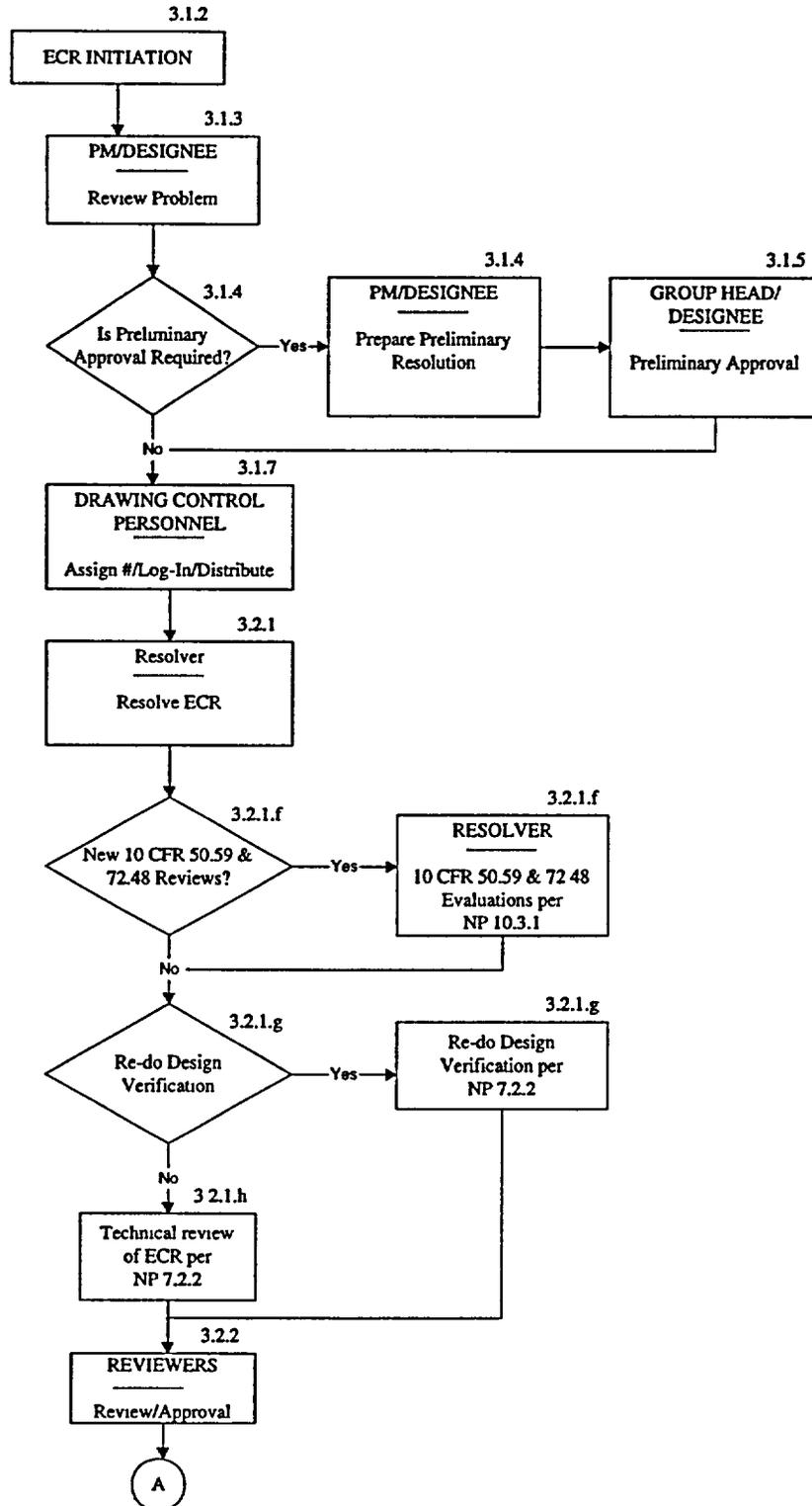
- 3.4.1 Write "CANCELLED" on Sheet 1 of the ECR and sign and date the notation.
- 3.4.2 Forward ECR to drawing control personnel for processing.

4.0 ATTACHMENTS

Attachment A, ECR Flowchart

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ATTACHMENT A  
ECR FLOWCHART



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Attachment A

