NO.: 09-024 REV.: 2 EFFECTIVE DATE: 07/12/91

APPROVAL SIGNATURE: Tom Torlaski

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TITLE: CONFIGURATION CONTROL BOARD/ENGINEERING CHANGE PROPOSAL (ECP)

## 1.0 SCOPE

This procedure establishes the process for the Waste Isolation Division (WID) change control board to review and evaluate WP Form 1977, Engineering Change Proposals (ECPs) (Attachment 1), at the Waste Isolation Pilot Plant (WIPP) to 1) determine which configuration changes shall be authorized; 2) provide guidance at the top management level on the relative priority of work; and 3) provide an integrated approach to design change. The intent of this procedure is to effectively utilize project resources on those projects which will be the most beneficial to the WIPP and to review and control changes to WIPP's design and packaging.

## 2.0 DEFINITIONS

Configuration Control Board (CCB) - The WIPP department representatives designated to make decisions regarding the allocation of resources for modifications including the evaluation of design changes for technical merit (Attachment 2).

Engineering Change Proposal (ECP) - A proposed change which affects currently approved engineering documents or WIPP facilities or equipment. Engineering documents include drawings, specifications, System Design Descriptions, etc. A proposed change which may not affect Engineering documents, but which affects other Technical Baseline Documents such as the Final Safety Analysis Report (FSAR) and the Safety Analysis Report for Packaging (SARP), shall also result in an ECP.

ECP Class - A category assigned to a change which reflects the ECP approval requirements.

Final Safety Analysis Report (FSAR) - The FSAR represents a statement and commitment by the DOE that the WIPP facility can be operated safely and at minimum risk if operated in accordance with the FSAR. The FSAR is the top-level safety document and serves as a compilation of all commitments necessary to ensure safe operation of the facility. Refer to WP 02-11.

Safety Analysis - The documented process to 1) systematically identify the hazards of a DOE facility operation; 2) describe and analyze the adequacy of the measures taken to eliminate, control, or mitigate identified hazards; and 3) analyze and evaluate potential accidents and their associated consequences or risks. Many different "methods or techniques" to achieve these goals exist. The user must select the appropriate method for the events being analyzed.

System Design Description (SDD) - The technical baseline document which defines the design, functional, operating and performance requirements and characteristics for a WIPP system. Refer to WP 09-10.

Unreviewed Safety Question - Any change, test, or experiment for which 1) the probability of occurrence or the consequences of an accident or malfunction of equipment important to safety, which was previously evaluated in a safety analysis report/safety assessment document will be significantly increased; 2) a possibility for an accident or malfunction of a different type than any evaluated previously in the safety analysis will be created which could result in significant safety consequences; and 3) the margin of safety, as defined in the basis for any operational safety requirement/ operational safety limit, is significantly reduced.

## 3.0 REFERENCES

DOE 4700.1, Project Management System
DOE 5480.5, Safety of Nuclear Facilities
DOE 6430.1A, General Design Criteria
DOE-AL 4700.1, Project Management System (Draft)
WP 02-11, WIPP Safety Analysis Manual
WP 02-1101, Preparation of Safety Analysis Documentation
WP 02-1102, Preparing Revision to WIPP Safety Analysis Documentation
WP 04-018, Work Authorization
WP 09-018, Design Verification
WP 15-208, Budget Baseline Change Control

## 4.0 GENERAL

The CCB will be chaired by the WID Assistant General Manager for Operations or a designated alternate. The Board will consist of the Managers and representatives identified on Attachment 2.

The board representation required for ECP review shall be determined by the board chairman. The chairman may cancel a meeting or table specific ECPs if he determines that the appropriate members are not present. A simple majority of the board members will approve an item for action. If a majority vote cannot be achieved or if the CCB chairman disagrees with the majority position, action on a specific ECP will be tabled. Further discussion on that ECP will be held with WID General Management, and results of that discussion shall be provided in writing to the CCB.

The CCB approval is intended to provide authorization to proceed with a change to the WIPP technical baseline only. No plant or WIPP Transport Packaging (WTP) modification field work shall begin without ECP approval. Engineering Change Orders (ECOs) and modification-type Plant Work Requests (PWRs) shall normally not proceed without an approved ECP. A cognizant design manager may allow ECO and PWR preparation to proceed under extenuating circumstances, but must ensure that no field work proceeds prior to ECO approval.

The CCB decisions do not replace the required approvals for cost or schedule baseline changes. These changes must be processed in accordance with the procedures in WP 15-2, the Cost/Schedule Control System Criteria (C/SCSC) Manual. Since the board members have overlapping responsibilities in the C/SCSC review process, the CCB chairman may entertain requests to review Cost and Schedule Change documentation at the same time that ECPs are reviewed by the board.

The board will meet biweekly or more often (as necessary), to review ECPs. Board actions will be documented on WP Form 1977.

Copies of all ECPs which are within the approval authority of the WID CCB shall be provided to the DOE/WIPP Project Office (WPO) for their information.

## 4.1 Responsibilities

Chairman CCB - Responsible for ensuring that the board meets at least biweekly, and that actions taken or recommended by the board are properly documented for adequate and thorough follow-up. As necessary, the chairman will task other groups to provide technical expertise and recommendations to the board.

Board Members - Responsible for attending meetings, as scheduled, and evaluating topics on the agendas as required.

Secretary - Responsible for coordinating the agendas for the meeting with the chairman, scheduling the meetings, completing the appropriate documentation for approval, and obtaining the appropriate expertise or information as designated by the chairman. The secretary shall also maintain a record of all proposed changes and CCB disposition of those changes.

Proposer - Responsible for proposing an engineering change, (normally the system cognizant engineer).

## 4.2 Potential Board Actions and Recommendations

Actions recommended by the board include, but are not limited to the following items:

- Approval to proceed with the proposed change
- Disapproval due to insufficient need or justification
- Approval to proceed with the proposed change, but with specific modifications identified by CCB
- Approval by WID CCB and authorization to submit for Department of Energy (DOE) approval

## 4.3 Scheduling ECPs for CCB Review

Items are normally considered for review by submitting an ECP to the CCB secretary. The secretary will publish an agenda prior to the meeting. The agenda will be addressed to all CCB members and will include a copy of all ECPs to be presented at the meeting. The names of the presenters and the approximate time schedule for presentation will also be included. The presenter will normally be the system cognizant engineer. The presenter shall identify details of the change and change impacts.

"Emergency" processing of ECPs is accomplished by the proposer obtaining an ECP number from the secretary, obtaining individual review and recommendation of the CCB members, and the approval of the CCB chairman. This review will normally require CCB member signature on the ECP form. If a board member is not available in person, a telecon

review is acceptable, and documentation of the telecon must be attached to the ECP prior to obtaining the chairman's signature. "After proposer obtains the appropriate signatures of approval, the original ECP is returned to the secretary, copies of the pre-approved ECPs shall be provided to the board at the next scheduled meeting." At his discretion, the CCB chairman may be the sole approval authority for an emergency ECP. If the CCB chairman elects to act as the sole approval authority, he shall notify the remaining CCB members, as soon as possible, of this circumstance.

### 4.4 ECP Review Criteria

Justification - Changes affecting the configuration of an item are to be limited to those which are necessary or offer significant benefit to WIPP. A proposed change may be approved if it meets any of the following criteria:

- The change corrects safety, operation, or maintenance deficiencies
- The changes incorporate other approved changes in operation, maintenance, WTP C of C, or design of an item; or other approved changes in mandatory Procedures, Orders, or Regulations
- The change will effect substantial life cycle cost savings. Documentation of the savings should accompany the ECP

Impacts - In addition to meeting the criteria noted above, the CCB must consider the following items:

- Cost and/or schedule impact
- Safety impacts
- Impact if the proposed change is not approved
- System or equipment functions impacted by the proposed change
- Interfacing system impacts resulting from the proposed change
- Impact on operations, maintenance or spare parts for the affected system or equipment
- Impact on the environment, documentation, permits, approvals, etc.

NOTE: The Rough Order of Magnitude (ROM) impacts to users of WTP shall address the above criteria if a change is proposed to WTP.

Review Thresholds - An ECP shall be prepared and approved for modifications (see WP 04-018) to a WIPP facility, system, equipment, or software that is configuration controlled per the WID Configuration Management Plan, WP 09-9.

An ECP shall be prepared for revisions to SDDs or revisions to Design Specifications regardless of whether a physical modification is to take place.

NOTE: WTP modifications are not included in the scope of WP 04-108; see WP 09-9 for WTP Configuration Control.

ECP Classes - Class 1 ECPs require approval by the DOE WPO. Class 2 ECPs require approval only by the WID CCB. The term "cost or schedule impact," as used below, means that a cost or schedule baseline change will be required in accordance with the C/SCSC Manual. An ECP may have a specific cost and a specific time required to accomplish it, but if that cost and that time are already included within an approved cost account, the ECP does not have a cost or schedule impact.

Class 1 ECPs include:

- Any ECPs which have a cost or schedule impact that changes the cost or schedule baseline and requires DOE WIPP Project approval.
- Any ECPs with a cost estimate of greater than $100,000 even if the cost baseline is not impacted.
- Any ECPs that significantly impact the WIPP technical baseline. An ECP that results in changes to an SDD design requirement, FSAR, SARP, or other document which significantly impacts the technical baseline. An ECP which proposes modifications not in conformance with DOE Order 6430.1A or its successor documents significantly impacts the technical baseline.

Class 2 ECPs include:

- ECPs which have a cost estimate of less than $100,000 and which do not impact the cost or schedule baseline.
- ECPs which affect plant configuration or plant documentation, but do not significantly affect the technical baseline. An ECP which changes the plant or a drawing or a specification but does not change the design basis from which the documentation originates does not significantly impact the technical baseline.

Pre-Approved ECPs - Class 2 ECPs that are minor in nature and have little impact on operations, maintenance, or safety may be pre-approved by the CCB secretary. This pre-approval constitutes an authorization to begin or continue engineering effort and eliminates the need to make a formal proposal at a CCB meeting. The pre-approved ECPs will be issued to the CCB members with the agenda and the remaining ECPs for consideration at the next CCB meeting. The CCB may approve or disapprove them after a review of the document (without formal proposal) or may elect to require a formal proposal before granting approval. If the CCB postpones approval or disapproves of the pre-approved ECP, the CCB secretary shall notify the proposer as soon as possible after that decision. The class 2 ECPs which may be pre-approved by the CCB secretary would typically include those that would result in an impact level 3 or 4 ECO per procedure WP 09-007.

The table in Attachment 3 lists ECP approval levels and classes for various proposed changes.

ECP Preparatory Considerations

The proposer shall determine, before submitting the ECP to the CCB, design changes which deviate from the defined requirements per DOE Order 6430.1a, General Design Criteria and document the deviation in the "change impacts" section of the ECP.

The proposer shall determine whether an unreviewed safety question exists and/or the FSAR is impacted (per WP 02-1102) before submitting the ECP to the CCB. A statement relative to the determination shall be included in the "Change description" section of the ECP.

If the proposer fails to determine if an unreviewed safety question exists prior to submitting the ECP, the CCB shall decide one of the following:

- Choose to either concur with the ECP, with the condition that a safety analysis per WP 02-1102 be performed and subsequent documentation be provided to the board via the secretary (WP Form 1825 shall serve as the documentation)

- Choose not to concur with the ECP as written and defer the ECP pending the safety analysis

The decision, by the CCB, shall be dependent on the technical, cost, or schedule impact of the ECP.

## 4.5 Records

The following records generated in support of this procedure shall be retained as permanent quality assurance records: WP Form 1977, Engineering Change Proposals (ECPs), original letters to the DOE (cover letters for the minutes and cover letters for Class 1 approval) and CCB meeting minutes.

The following records generated in support of this procedure shall be retained as nonpermanent quality assurance records: CCB meeting agendas.

The CCB secretary is responsible for validation of these records prior to transmittal to the Master Records Center (MRC).

Temporary storage of these records shall be accomplished by storage in a fire proof cabinet that complies with the requirements of ASME NQA-1, Supplement 17S-1, paragraph 4.4.3 and WP 13-6.

Corrections to these records, when needed, shall be made by drawing a single line through the erroneous text and inserting the correction. The person correcting the text shall initial and date the document adjacent to the corrected text. The error shall not be obliterated.

These records shall be identified on the CC&D Records Inventory and Disposition Schedule (RIDS). Permanent storage is the responsibility of the MRC.

## 4.6 Change History

Revision 2 represents a complete revision of WP 09-024; therefore, sidebar indications of procedural changes are not used. Changes incorporate the configuration management requirements essential for WTP.

## 5.0 PROCEDURE

1. The proposer submits WP Form 1977 to the CCB Secretary.

2. The secretary of the CCB adds the item to the agenda.

3. The secretary ensures that the ROM cost estimate, and the description of the scope of work, are adequate for each package.

4. The Chairman schedules a CCB meeting.

5. The CCB Secretary provides a copy of the meeting agenda and ECPs to all CCB members and ECP proposers.

NOTE: Pre-approved ECPs shall be included with agenda.

6. The proposer or the proposer's representative presents the change to the CCB.

NOTE: Pre-approved ECPs per Section 4.4 format require proposer presentation.

7. The CCB members evaluate the proposed change.

8. The CCB Secretary records the CCB Members' evaluation on page 2 of the ECP, including any recommended modifications.

9. The CCB Chairman signs and dates the form, and indicates his disposition in the appropriate block.

10. The CCB Secretary publishes a letter summarizing the CCB meeting results Copies of the minutes are sent to the board members and proposer's managers. Copies of the approved ECPs are sent to the proposers.

NOTE: A letter requesting approval of Class 1 ECPs by the DOE is prepared by the secretary. In addition, a cover letter, a copy of the meeting minutes, and ECPs are provided to the DOE for disposition of the Class 2 ECPs.

11. For Class 1 ECPs, the CCB Secretary prepares letter to DOE/WPO requesting approval/disapproval disposition, obtains CCB Chairman signature, and makes distribution.

12. For Class 1 ECPs, the CCB Secretary records DOE/WPO disposition and provides a copy of ECP to originators informing them of this disposition.

NOTE: Records will be managed per Section 4.5 of this procedure.

13. The Cognizant Engineer prepares the appropriate PWRs (WP 04-018), ECOs (WP 09-007), and PRCUs (WP 15-091), if applicable.

NOTE: The Cognizant Engineering Manager notifies the users of DOE/WPO disposition.

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## ENGINEERING CHANGE PROPOSAL

(1) ECP No. _____ (2) Date _____ (3) ☐ Class 1 ☐ Class 2

(4) Title _____

(5) Baseline Impacts ☐ Technical ☐ Cost ☐ Schedule

(6) Priority ☐ Emergency ☐ Urgent ☐ Routine

(7) Proposer Name _____ Phone _____ Org. _____

(8) System (if applicable) _____ (9) Need Date _____

(10) Change Category (11) CAM _____

☐ Corrects Safety, Operational or Maintenance Deficiency

☐ Incorporates Other Approved Project Changes

☐ Effects Substantial Life Cycle Cost Savings

(12) Change Description (attach additional sheet if needed) _____

(13) Change Impacts

On Systems/Equipment/Facility _____

On Cost FY _____ $ _____ FY _____ $ _____ FY _____ $ _____

On Schedule _____

(14) Impact if Change Not Made _____

ECP_____ P. 2 of _____

(15) **Class 2 Approvals / Class 1 Recommendations for Approval**

| ORGANIZATION | REPRESENTATIVE | RECOMMENDATION CONCUR | NOT CONCUR | CONCUR W/COMMENTS |
|---|---|---|---|---|
| Engineering | _____ | ☐ | ☐ | ☐ |
| Safety | _____ | ☐ | ☐ | ☐ |
| Surface Operations | _____ | ☐ | ☐ | ☐ |
| Underground Ops. | _____ | ☐ | ☐ | ☐ |
| Maintenance | _____ | ☐ | ☐ | ☐ |
| Project Plan & Integ. | _____ | ☐ | ☐ | ☐ |
| QA | _____ | ☐ | ☐ | ☐ |
| Reg./Env. Programs | _____ | ☐ | ☐ | ☐ |
| Controller | _____ | ☐ | ☐ | ☐ |
| Config. Control | _____ | ☐ | ☐ | ☐ |

M

(16) Comments _____

_____

_____

_____

_____

(17) Disposition

☐ Approved ☐ Approved with Comments ☐ Disapproved

Chairman _____ Date_____

_____

(18) Class 1 Approvals

☐ Approved ☐ Approved with Comments ☐ Disapproved

Comments _____

_____

_____

_____

DOE Approval Authorization _____ Date_____

# INSTRUCTIONS FOR ECP FORM

A. Number all pages.

B. Attach additional sheets as required.

C. ECP number and page number shall be included on all additional sheets.

D. Instructions for specific form entries:

1. ECP number to be entered by CCB secretary.

2. Date of submittal to CCB secretary, to be filled in by proposer.

3. ECP class block to be filled in by proposer.

4. A short, unique descriptive title to be filled in by proposer.

5. Impact blocks to be checked by proposer. An ECP has a baseline cost impact only if the estimated cost is outside of the scope and budget of a Cost Account. An ECP has a baseline schedule impact only if it changes the completion date of a Cost Account work package.

6. Priority to be filled in by proposer. An Emergency priority would normally correspond with the definition for a Priority 1 Plant Work Request. Urgent and routine priorities would normally correspond with definitions for Priority 2 and lower Plant Work Requests. The CCB may concur with or alter this priority.

7. Name, phone, and organization to be printed by the proposer.

8. System identifier to be filled in by the proposer.

9. Need date to be filled in by the proposer. The need date is the date that ECP approval is required in order to allow work to continue without additional cost or schedule impact.

10. Change category block to be checked by proposer.

11. Cost Account Manager signature required to confirm impacts on cost or schedule identified in item 5.

12. Description of the proposed change, supplied by the proposer. The proposer shall provide sufficient detail to fully inform CCB members of what is being proposed and why. Continuation sheets and other documents may be used as required.

13. Description of the impacts of the proposed change on the system referenced in item 8, and on any other impacted systems, equipment or facilities, provided by the proposer. The dollar value of the baseline cost impacts of the proposed change is to be indicated, along with the fiscal year of the cost impacts. If the change will not impact the cost baseline (i.e., "cost" is not checked in item 5) the dollar value of the change shall still be noted for the change board's consideration. The proposer shall identify the baseline schedule impact by specifying the work package which will be delayed and the magnitude of the delay.

14. A brief explanation, supplied by the proposer, of the effect of not making the change on cost, schedule, and technical performance.

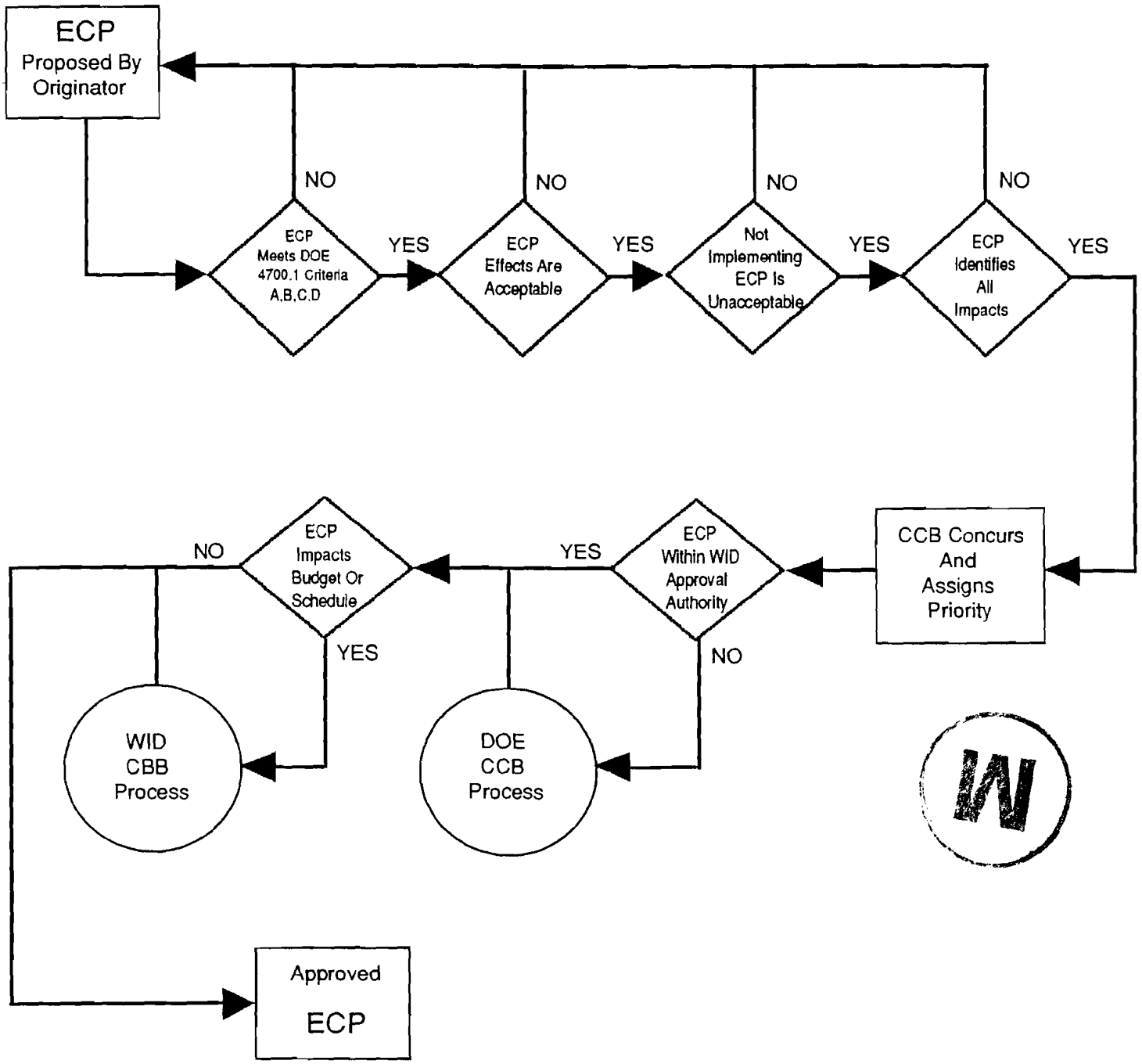
15. A record of the recommendations of the change board members. The CCB secretary shall enter the names of the members voting and their recommendations by checking the appropriate block.

16. A record of comments, entered by the CCB secretary, which modify the proposed change. The secretary shall enter the words "pre-approved" if appropriate in accordance with Section 4.4 of the procedure.

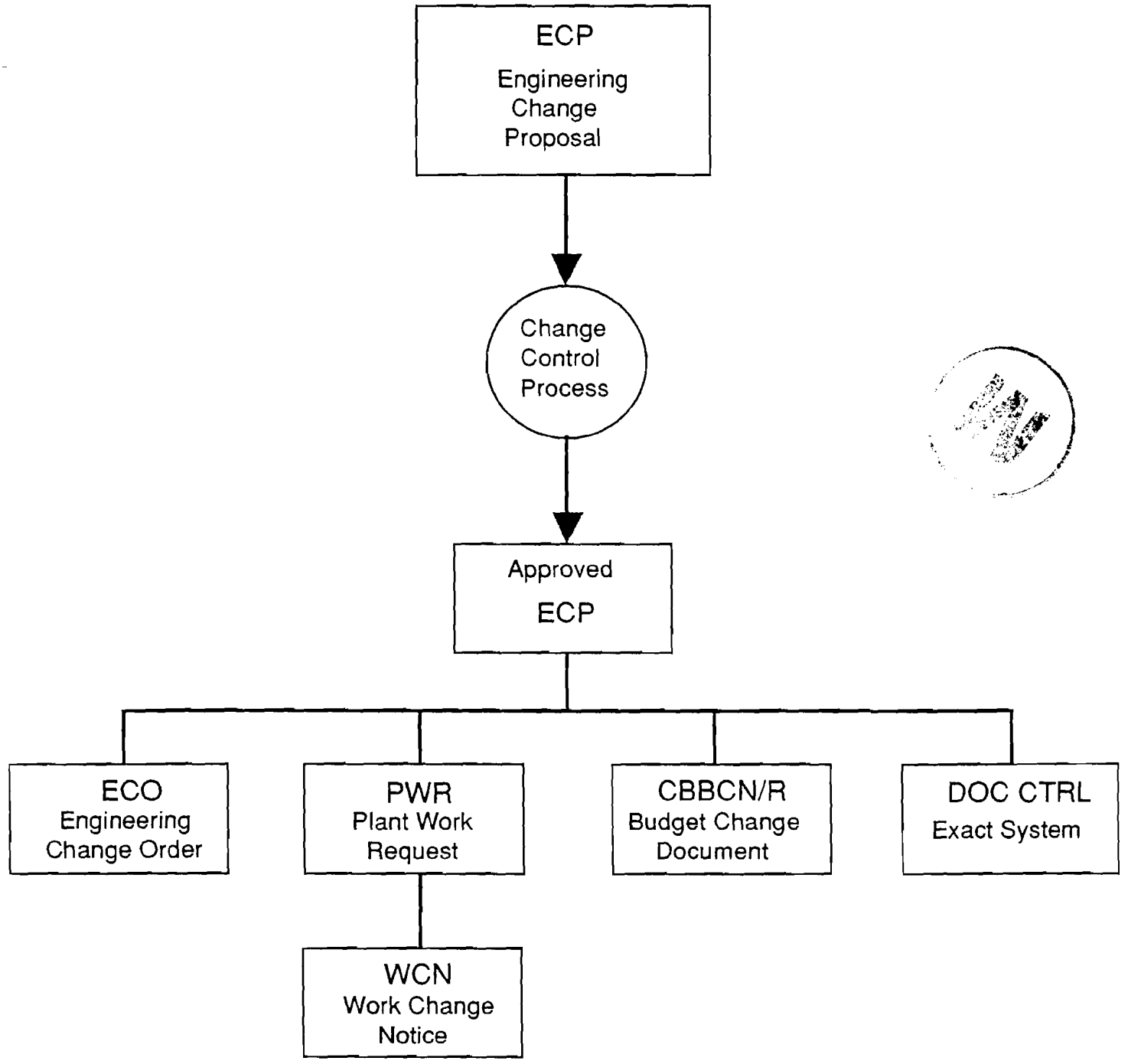
17. The disposition of the ECP. The CCB chairman checks the appropriate block and signs and dates the form.

18. The record of approval or disapproval for Class 1 ECPs. This record may be entered directly by the DOE authority designated to approve ECPs or it may be a reference to a DOE letter which provides the ECP approval. The CCB secretary shall fill in this item if a letter of approval is referenced, and shall include the letter number and date in this item.

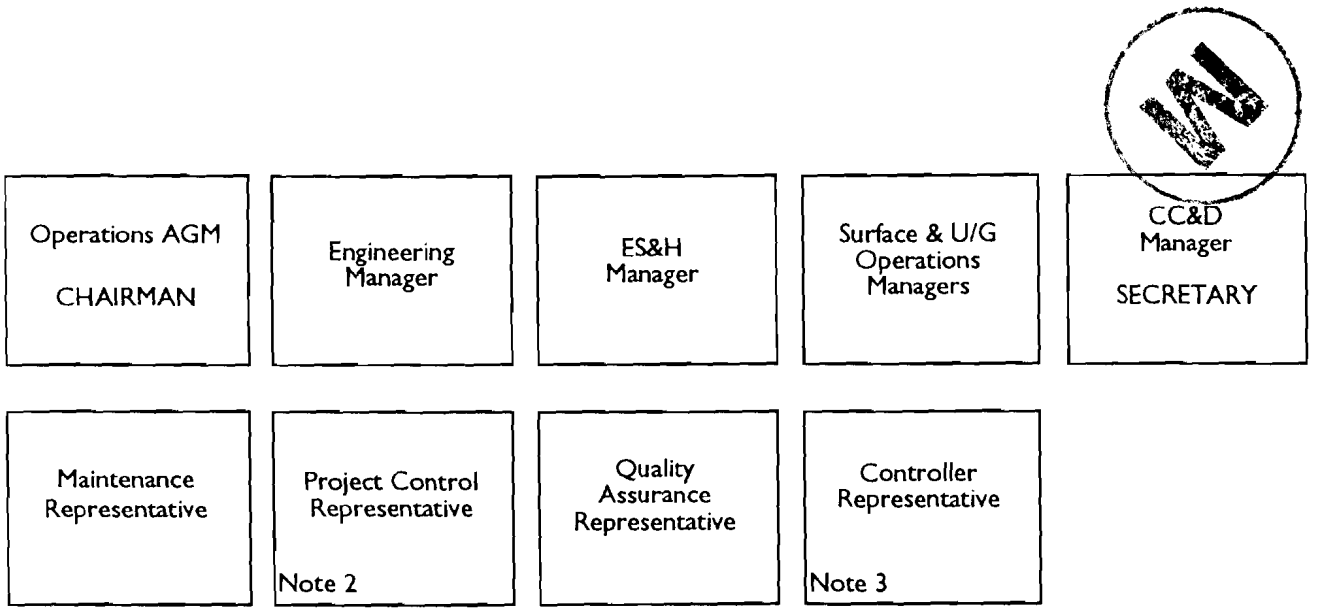
# CHANGE CONTROL PROCESS



# CHANGE CONTROL PAPER



# CHANGE CONTROL BOARD MEMBERSHIP




NOTES:

1. Managers of Engineering; Environment, Safety, and Health; RH & Surface Operations; Underground Operation(s); and CC&D may designate alternate representatives in writing to the CCB Chairman.

2. Project Control representative, if attending, may cover budgeting and schedule concurrence.

3. Controller representation only necessary for ECPs impacting the Site Development Plan.

# ECP APPROVAL LEVELS FOR VARIOUS CHANGES

| DOE WPO (Class 1) | WID CCB (Class 2) | No ECP Required* |
|---|---|---|
| ~AR | Interface control documents | O&M Manuals |
| SD[illegible] Design Requirements | P&IDs | Drawing corrections |
| Any design basis document | Flow diagrams | Drawing information additions |
| Any changes with costs > $100,000 | Specifications | Vendor drawings not affecting system design, e.g., board level changes or component changes |
| Changes not in conformance with DOE Order 6430.1A | Architectural design drawings | Shop drawings |
| | Single line electrical drawings | Panel schedules |
| | Instrument and control drawings | Work that does not affect the plant configuration |
| | | Changes that are included in the approved Site Development Plan |
| | | Changes that will be reviewed as part of the revision process to the Site Development Plan |

*No ECP is required for these items unless the proposed change also impacts items in Class 1 or Class 2.