ENCLOSURE

PG&E **Pacific Gas and Electric Company**

DEPARTMENT OF NUCLEAR PLANT OPERATIONS

DIABLO CANYON POWER PLANT UNIT NO(S) 1 AND 2

ADMINISTRATIVE PROCEDURE
ASME SECTION XI

TITLE: REPAIR/REPLACEMENT PROGRAM

NUMBER	AP C-755
REVISION	3
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IMPORTANT TO SAFETY

APPROVED: _____
PLANT MANAGER DATE

SCOPE

This procedure describes the overall program for Diablo Canyon Units 1 and 2 ASME Boiler and Pressure Vessel Code Section XI repairs and replacements. All such repairs and replacements shall conform with this procedure. This program meets the requirements of ASME Boiler & Pressure Vessel Code Section XI, 1977 Edition including the Summer 1978 Addenda. Later editions of this Code, when identified in Title 10, Code of Federal Regulations, Part 50.55a may be used for additional guidance and will be included in detailed work plans. Repair program activities shall also conform to all applicable quality assurance program requirements. This procedure and changes thereto require PSRC review.

DISCUSSION

The repair program is necessary to assure compliance with ASME B & PV Code Section XI as required by 10CFR50. This program only applies to components covered under PGandE's Inservice Inspection Program Plan for Diablo Canyon as identified on Engineering drawings 102028 for Unit 1 and 104628 for Unit 2. Copies of this procedure and revisions to it are sent to the NRC, Authorized Nuclear Inservice Inspection Agency (ANIA) and State of California. Repair or replacement may be necessitated by any of the following:

1. Indications exceeding the allowable limits of IWB-3000, IWC-3000, IWD-3000, or IWF-3000 as discovered during Preservice Inspection/Inservice Inspection examinations. Such indications will be reported in accordance with the Plant Administrative Procedures.

2. Indications or other evidence of possible flaws observed during routine inspection (Preventive Maintenance). These items are reported in accordance with the Plant Inservice Inspection Procedures.

3. Changes in regulatory requirements.

4. Changes to improve equipment service or reliability.

5. Damage, failure or end of service life.

DEFINITIONS

All work accomplished on components and their supports within the ASME Section XI Boundary is covered by one of the following:

1. Repair - All means of reconditioning an existing part to render it acceptable for service which involve metal removal or welding when no new base material is added.

2. Replacement - includes all instances where an existing part is removed and exchanged for a new part or new base material is added. Installation of new parts to existing systems where there is no pre-exisiting part is also considered a replacement.

3. Additions - complete new systems added to the plant are not covered by this procedure. New systems are addressed by ASME Section III.

PROGRAM

A. Description

1. Figure 1 delineates the steps that may be taken to effect a repair or replacement in accordance with Section XI. Not all steps would be involved in each case. When a rejectable NDE indication results from the first comparison with the criteria of IWA-3000, a data sheet depicting the size and location of the indication shall be completed.

2. An evaluation of the cause of the indication will be made in sufficient detail to permit a decision to accept as is, repair, (remove and/or weld) or replace as the corrective action.

3. When a repair or replacement is deemed necessary, except for exempt items (see C.1.e.), it shall be conducted in accordance with a specific plan developed to implement the requirements of this program.

4. The specific repair/replacement plan shall be submitted to the Authorized Nuclear Inspector (ANI) for a review and inclusion of hold points. Each completed repair or replacement shall be documented on Code Form NIS-2 and submitted with the next Report of Inservice Inspection. Each specific repair/replacement plan will meet the requirements of this program to fully implement the requirements of Section XI.

B. Repairs

1. Repair Plan - Appropriate forms shall be used to document the repair plan which shall specify all information needed to conduct the complete repair. The following information will be included.

   a. Component identification and description, Unit, code, class, original design and fabrication code, code symbols and serial number, National Board number, completion date (year) and manufacturer and/or installer. Components and systems which were not issued code symbols or National Board numbers will be noted.

   b. The detailed repair plan will indicate the material specification(s) of the part being repaired for components which contain more than one material specification. The repair plan shall indicate the thickness(es) of the part in that area to be repaired.

   c. Reason for repair. (NDE method, results of inspection, and flaw description.)

   d. If welding is to be used, an evaluation shall be made of weld repair suitability. This evaluation should consider the cause(s) of the failure to assure that the weld repair procedure selected is suitable for the intended service of the component to be repaired.

   e. General description of required repair.

f. Design and fabrication codes governing the repair activity, as referenced in 10CFR50.55a.

g. Substitution of originally specified material by another material when used for a permanent repair requires a design change. PGandE Engineering approval is required.

h. Step by step work plans (Including procedures to be used).

1) Thermal removal or cutting when required shall be done in accordance with IWB-4000.

2) The selection of welding and nondestructive examination procedures shall be in accordance with the welding and NDE requirements of the original fabrication code. Alternatively specific later editions or addenda of the fabrication code or Section III which have been approved for repair of specific components may be used.

3) Nondestructive examinations shall be in accordance with qualified and approved PGandE or Vendor procedures. The examinations shall include the method and/or procedure that found the original flaw and additional examinations required by the Inservice Inspection Program Plan. All nondestructive examination procedures will be prepared in full compliance with applicable Code requirements.

4) Pressure tests, after repairs, will be conducted in accordance with IWA-4400.

5) Pump and valve operability tests shall be performed as required following repairs.

6) Provision for the inclusion of hold points by the Inservice Inspection Group (ISI/NDE), Quality Control and the ANII.

2. Removal

   a. Removal of the indication may be the first option. Either mechanical or thermal removal methods may be used. Thermal removal shall be in accordance with the requirements of IWB-4000.

   b. An attempt may be made to reduce the indication to an acceptable size without requiring repair by welding when minimum wall criteria is not infringed upon. The extent of material removal will be limited to that necessary to satisfy the required size reduction. The area of metal removal shall be faired into the surrounding area and examined by the magnetic particle or liquid penetrant method, to insure that the indication has been reduced to an acceptable size in accordance with IWA-3000.

   c. Minimum wall thickness(es) shall be verified after completion of mechanical removal operations.

   d. Indications that still exceed the acceptance standards may be subject to further analysis for possible acceptance. This analysis shall use analytical procedures such as those described in Appendix A of Section XI. All such evaluations will be submitted for regulatory review.

3. Repair by Welding

   a. All welding shall be performed in accordance with PGandE's Design Specification and the Construction Code as specified in the Repair Plan. "Half bead" welding techniques in accordance with IWB-4000, IWC-4000 or IWD-4000 may be specified alternatively for Class 1, 2, or 3 components respectively.

   b. Welding procedures and welders will be qualified in accordance with requirements of the Fabrication Code specified for the repair.

C. Replacements

1. Plan - Appropriate forms shall be used to document the replacement plan which shall specify fabrication, purchasing and installation requirements for the replacement.

   a. It shall contain essentially the same information as a repair plan (paragraph B.1) except that an evaluation of the cause(s) of the failure shall be conducted to assure that the selected replacement is suitable. If the cause of the failure appears to be a deficiency in the specification for the existing part or component, the specification for the replacement shall reflect the appropriate corrective provisions. All such corrective provisions shall be consistent with the relevant requirements of the Construction Code in effect at the time of the specification revision.

   b. The replacement shall meet the requirements of the original construction code or Section III, as referenced in 10CFR50.55a.

   c. Installation of the replacement shall be in accordance with the original Design Specification and Construction Code of the component or system. Later editions of the construction code or Section III, either in its entirety or portions thereof, may also be used. When welding is required for replacement installation, it shall be as specified in B.3 above. The evaluation of suitability for the replacement will also address the suitability of any installation welds as required by IWA-4130.

   d. If alternate code requirements (later editions than originally specified) are used in C.1.b. or C.1.c. above, a review shall be conducted by the appropriate Diablo Canyon Design Engineer to verify that the alternate code requirements are compatible with the original specification requirements. This review shall comply with the PGandE design change process.

e. The following items and parts are exempt from these rules. They shall be replaced in accordance with standard practices that meet the requirements of the PGandE Quality Assurance Program.

a) Gaskets

b) Instruments

c) Electrical conducting and insulating material

d) Piping, valves, and fittings 1 in. nominal pipe size and less, except that materials and primary stress levels shall be consistent with the requirements of the applicable Construction Code. Detailed stress analysis and consideration of secondary stress is not required.

e) Nonstructural pump and valve internals except when the original equipment was constructed in accordance with a Construction Code or Code Case

f) Pump seal package and valve packing.

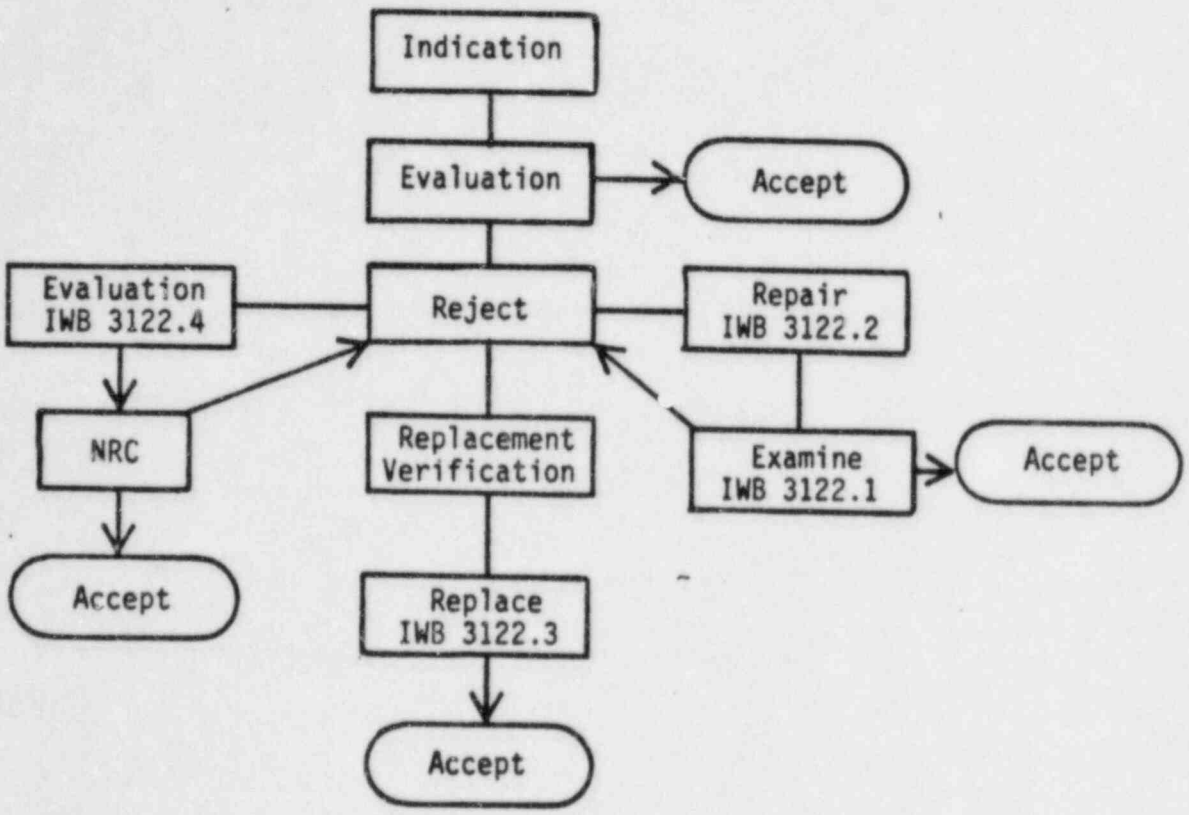
D. Records and Reports

1. All records and reports will be developed and maintained in accordance with IWA-4000, IWA-6000, IWA-7000, and the PGandE Quality Assurance system.

2. All repairs and replacements shall be documented on Form NIS-2 (Code Case N-308). Repair and replacement reports for Code Class 1, 2 and 3 materials and their supports shall be available for regulatory agency review after completion of the repairs or replacements.

REFERENCES

1. ASME B&PV Code, Section XI, 1977 Edition, Summer 1978 Addenda



SECTION XI EVALUATION STEPS FOR REPAIRS OR REPLACEMENTS
FIGURE 1