SUMMARY REPORT

FOR

REGIONAL EVALUATION

OF

PALO VERDE UNIT TWO

DOCKET NO. 50-529

PREPARED BY

U.S. NUCLEAR REGULATORY COMMISSION

REGION V

OCTOBER 10, 1985

SUMMARY REPORT

FOR

[illegible]

OF

PALO VERDE [illegible]

DOCKET NO. 50-52[illegible]

PREPARED BY

U.S. NUCLEAR REGULATORY COMMISSION

REGION V

OCTOBER 10, 1985

a. Summary Status

1. Applicant's current estimated licensing date: 11/1/85

2. Inspection Program: Will be completed prior to 11/1/85 provided licensee has reviewed required preoperational test results through the Test Working Group level.

3. Review of Actions on Generic Correspondence: The licensee has not completed action on two Circulars. The licensee's action on each of these and the one remaining Bulletin must be reviewed prior to OL issuance. The three Generic Letters will be reviewed as part of routine inspection and are not tied to licensing.

4. Reportable 10 CFR 50.55e Events: All remaining 10 CFR 50.55(e) reportable Deficiency Evaluation Reports (DERs) will be reviewed for licensee action by RV by November 1, 1985. A sample of the remaining Not Reportable DERs will be reviewed by Region V for reportability assessment by November 1, 1985.

5. Preoperational Testing: As of 10/8/85, the licensee had completed 155 of 184 required preoperational tests. Preoperational testing will be completed on all safety related or important to safety systems prior to fuel load.

6. Significant System Performance Deficiencies: All system performance deficiencies appear to have been satisfactorily resolved by the licensee except as noted in Section 1(5). Region V will verify this prior to OL issuance.

7. System Turnovers: 66 of 457 safety related or important to safety subsystems have not been turned over to the operations department. Approximately 1245 construction deficiencies remain as of 10/8/85. Region V will begin reviewing this list once it has been reduced to a few hundred items.

8. Procedures: The surveillance procedures, and with minor exceptions, the operating procedures to be used at Unit 2 are the same as those for Unit 1 except for Unit designation. Seventeen surveillance procedures and three operating procedures remain to be converted for Unit 2 use.

b. Readiness for Operation

The following specific issues require resolution. It is anticipated that some portions of these will be resolved as license conditions or prior to issuance of the low power license. This distinction will be made once the actual low power OL date becomes clear, and the licensee substantially completes the other open items discussed in this report.

1. The post accident sampling system will not be operational by the present fuel load schedule. Based on past experience, inspection of system may be desirable prior to issuance of the Unit 2 OL in part

because the licensee recently submitted an FSAR change for the PASS system design.

2. The radiation monitoring system test program will not be substantially complete by the projected fuel load date. The licensee has stopped preoperational testing and transferred responsibility for completion of testing to the operations engineering organization. The test schedule developed shows that testing will be phased in as the monitors are required by Technical Specification.

3. Testing of the radioactive waste systems (GR, LR, SR) is expected by the licensee to be completed by October 20, 1985 with an additional 3 to 5 days to review test results and prepare the report.

4. The pressurizer safety valves acoustic monitoring system must be calibrated.

5. Approximately twelve allegations are being reviewed by the Region V staff. These allegations are expected to be addressed prior to OL issuance. There is also an allegation related to Radiation Monitoring System startup testing that is unresolved and may impact on our readiness evaluation.

6. Loss of auxiliary spray due to loss of charging pumps must be addressed for Unit 2 for adequate corrective action by the licensee.

7. Loss of offsite power due to multiplexer malfunction must be addressed by the licensee for Unit 2 as well.

c. <u>Project History</u>

Palo Verde Nuclear Generating Station Unit No. 2

PLANT CHARACTERISTICS:

Docket No.:	05000529
CP No. & Date Issued:	CPPR-142/05-25-76
CP Expiration Date:	12/31/85
Applicant:	Arizona Public Service Company
Plant Location:	36 miles west of Phoenix, AZ
IE Region:	V
AE:	Bechtel
NSSS:	Combustion Engineering
Constructor:	Bechtel
Reactor Type:	PWR
DER (MWE):	1304

[illegible] (Ref. [illegible]).

2. The [illegible] [illegible] satisfactorily [illegible] by the project [illegible]. The licensee has adopted preoperational testing and startup program [illegible] or completion of [illegible]. The [illegible] meeting [illegible] Specification.

3. The [illegible] of the radioactive [illegible] (C[illegible]) [illegible] licensee [illegible] 20, 1983 [illegible] 3 to 5 days [illegible] and prepare the [illegible].

4. [illegible] calibrated.

5. Approximately twelve allegations [illegible]. The allegations [illegible].

6. [illegible]

7. [illegible]

[illegible] SUMMARY

[illegible] Nuclear Generating Station Unit No. 2

[illegible]:

Docket No.:	05000529
Construction Permit:	CP[illegible]-[illegible]
Expiration Date:	12/31/82
[illegible]	[illegible]
Location:	36 miles [illegible] of Phoenix, AZ
Region:	V
[illegible]	[illegible]
[illegible]	Combustion Engineering
[illegible]	[illegible]
[illegible]	PWR
[illegible]	1270

KEY PERSONNEL:

Corporate Contact:	E. E. Van Brunt, Jr., Executive Vice President
Corporate Address:	P. O. Box 52034 Phoenix, Arizona 85072-2034
Corporate Phone No.:	(602) 271-7900
NRC LPM:	E. Licitra
IE Resident Inspector:	R. Zimmerman/G. Hernandez

FUEL LOAD DATE CHANGES AS REPORTED BY UTILITY:

Report Date	New Schedule	Reason for Change Reported by Utility
11/13/84	12/31/85	Because Unit 2 construction is sequential to that of Unit 1, the Unit 1 construction delays impacted on the Unit 2 construction schedule.

LOCAL PUBLIC DOCUMENT ROOM:

Phoenix Public Library
12 East McDowell Road
Phoenix, ARizona 85004

Status as of 10/8/85

d. CONSTRUCTION STATUS REPORT NUCLEAR POWER PLANTS

PALO VERDE 2

CONSTRUCTION STATUS:

Applicant's Current Estimated Fuel Loading Date:	By 11/1/85
Applicant's Previous Estimated Fuel Loading Date:	10/1/85
Applicant's Estimated Fuel Loading Date at CP Issuance:	11/1/84
Applicant's Current Estimated Commercial Operation Date:	4/86
Applicant's Construction Completion Estimate as Defined in CP:	
(Earliest):	2/1/83
(Latest):	12/31/85

CURRENT ESTIMATED PERCENT CONSTRUCTION COMPLETE: 99.9%

COMMENTS REGARDING CURRENT CONSTRUCTION STATUS:

	ESTIMATED START	ACTUAL START	ESTIMATED COMPLETION	ACTUAL COMPLETION	ESTIMATED % COMPLETE
Mobilize and Prepare Site:		6/76		6/77	100%
Plate Structural Concrete:		8/77		12/81	100%
Install Reactor Pressure Vessel:		6/80		7/80	100%
Install Large Bore Process Pipe:		9/78		5/85	100%
Install Large Bore Pipe Hangers, Restraints, and Snubbers:		10/78		5/85	100%
Install Small Bore Pipe:		4/79	10/85		99.6%
Install Cable Tray:		6/78		3/82	100%
Install Exposed Metal Conduit:		1/78	10/85		99.9%
Install Power, Control, Instrumentation, and Security Cable:		2/81	10/85		99.5%
Install Electrical Terminations:		5/81	10/85		99.1%
Conduct Reactor Cold Hydrostatic Test:		10/84		11/84	100%
Conduct Hot Functional Test:		6/85		8/85	100%
Conduct Preop and Acceptance Tests Necessary for Fuel Load:		3/83	10/85		88%

CONSTRUCTION STATUS REPORT [illegible] POLLEN [illegible]

[illegible] OF STATUS:

[illegible] Current Fuel Loading Date [illegible]
[illegible] Previous Fuel Loading Date [illegible]
[illegible] Initial Loading Date at CP [illegible]
[illegible] Projected Commercial Operation Date [illegible]
[illegible] Completion Estimate as Derived [illegible] CP [illegible]
(Current) [illegible]
CP [illegible]

[illegible] ESTIMATED PERCENT CONSTRUCTION COMPLETE: 00.0%

[illegible] SCHEDULING CONSTRUCTION STATUS:

	ESTIMATED ORIGINAL START	ESTIMATED ORIGINAL COMPLETION	[illegible]	[illegible]
[illegible]	6/76		6/7[illegible]	[illegible]
[illegible] Commercial Operation:	8/77		[illegible]	100%
[illegible] Power	6/80		7/80	[illegible]
[illegible]:				
[illegible] Power	6/79		[illegible]	100%
[illegible] Plant:				
[illegible] Power Block	10/77		5/85	100%
[illegible] Structure				
[illegible]:				
[illegible] Power Plant	4/79	10/85		00.6
[illegible] Tray:	6/76		[illegible]	100%
[illegible] Metal	1/76	10/83		00.[illegible]
[illegible]				
[illegible] Cooling	2/81	10/85		0
[illegible]				
[illegible] Life:				
[illegible]	5/81	10/85		[illegible]
[illegible]				
[illegible] Coal	10/84		[illegible]	[illegible]
[illegible] Tank				
[illegible] Protection	6/85		5/85	100%
[illegible]				
[illegible] and	3/83	10/85		58%
[illegible] Storage Tank				
[illegible]				
[illegible]:				

e. NRC Inspection Activities

MC 2512 Program Status

Priority 1 Complete

MC 2513 Program Status (Modules Remaining to be Completed)

Module	Subject	Status
35744	QA Program - Design Changes and Modifications	50%
35745	QA Program - Surveillance Testing	75%
35750	QA Program - Test and Measurement Eq.	0%
36301	Operational Staffing	75%
70322	Engineered Safety Features Test	0%*
70326	Loss of Offsite Power Test	0%*
70329	Preoperational Test Verification	0%*
79501	Water Chemistry Control	0%
79502	Plant Systems Affecting Water Chemistry	0%
80521	Environmental Protection	0%
83524	External Exposure Control	60%
83525	Internal Exposure Control	60%
84522	Solid Waste	40%*
84523	Liquid Waste	85%
84524	Gas Waste	85%*

* Indicates action remaining to be done by the licensee.

The modules listed above are scheduled for completion by November 1, 1985 with the exception of 35750, which is scheduled for a Palo Verde team inspection October 28 - November 8, 1985. This area was extensively reviewed per the same module in Unit 1 and the M&TE program applies to all operational units.

The Region V Safeguards preoperational inspection was conducted October 4 - 10, 1985. Several violations (related to Unit 1) and open items were identified. Further evaluation of the inspection findings will be necessary and the Safeguards section is not prepared to render an OL recommendation at this time.

The Emergency Preparedness preoperational inspection was conducted on September 27 - October 4, 1985. No open items were identified, however, there will be several improvement items. The improvement items will not affect licensing.

Inspection of TMI Action Plan items is about 75% complete for items required for fuel load. The remaining fuel load items will be reviewed by Region V by November 1, 1985. Seven items still require licensee action.

MC 2514 Program Status

Limited inspection has been performed for the startup testing phase. The startup test procedures for Unit 2 will be the same as those used in

[illegible] Inspection Activities

[illegible] Program Status

[illegible]

13 Program Status (Modules Remaining to be Completed)

No.	Subject	% [illegible]
[illegible]	QA Program - Design Changes and Modifications	[illegible]
[illegible]	QA Program - Surveillance [illegible]	[illegible]
	QA Program - Test and Experiments [illegible]	[illegible]
[illegible]	Operator Training	[illegible]
[illegible]	Inspection [illegible]	[illegible]
	Loss of Offsite Power Test	[illegible]
[illegible]	Preoperational Test Verification	[illegible]
[illegible]	Water Chemistry Control	[illegible]
	Plant [illegible] Affecting Water Chemistry	[illegible]
[illegible]	Environmental Protection	[illegible]
	External Exposure Control	[illegible]
[illegible]	Internal Exposure Control	[illegible]
	Solid Waste	[illegible]
[illegible]	Liquid Waste	[illegible]
	Gaseous Waste	[illegible]

*Indicates action remaining to be done by the licensee.

Modules listed above are scheduled for completion by [illegible] October 1, 19[illegible] with the exception of 35/50, which is scheduled for a [illegible] [illegible] operational units.

[illegible] Region V [illegible] the preoperational inspection was conducted [illegible] several [illegible] render [illegible]

[illegible] inspection [illegible] will be covered [illegible] improvement items. [illegible]

[illegible] Action Plan items is about [illegible] for fuel load. The remaining fuel load items will be resolved [illegible] Region V by November 1, 1975. Seven [illegible]

14 Program Status

[illegible] inspection has been performed for the station, [illegible] will be the same as [illegible]

Unit 1. The licensee is in the process of converting the Unit 1 test procedures for use in Unit 2.

Special Inspection Activities

See Table 1.

Table 1

Insp Number	Insp Date	Insp Hours	Brief Description	Findings
81-02	1/26/81-2/5/81	356	Regional Construction Assessment Team (CAT) Inspection	Receiving inspectors; equipment maintenance, special handling requirements, maintenance and storage appeared weak. Management and QA/QC visibility was high; construction management appeared strong.
83-07	6/1/82-3/11/83	206	Investigation of allegations concerning records safety-related electrical terminations.	Allegations substantiated (Civil Penalty issued)
84-41	9/5-12/14/84	384	As-built configuration control for pipe supports. Design control administration and implementation.	No significant problems identified.

f. Generic Correspondence

The licensee has satisfactorily responded to all applicable Bulletins and Circulars, with the following exceptions:

(1) IE Bulletin 79-14
(2) IE Circulars 80-09 and 81-14

The review of the above Circulars is pending licensee completion of action on them. Review of licensee action on Bulletin 79-14 will be completed by Region V by November 1, 1985.

g. Enforcement History

Escalated Enforcement Action	Reason for Action	Corrective Action
Civil penalty of $40,000 dated December 12, 1983 (Imposition suspended pending release of report of investigation by Department of Justice. Report released by DOJ 20 Sept 84)	Unit 1 Electrical Termination installation cards did not reflect crimp tool number and signature of the installer.	Licensee demonstrated that other controls on termination cards ensured all terminations were technically adequate. This action also applied to Unit 2.
Civil penalty of $40,000 (mitigated to $20,000) dated December 12, 1983	Licensee's Quality Assurance program did not maintain adequate control over activities affecting quality.	Licensee stopped testing, conducted a comprehensive audit of startup work controls, and revised administrative controls for startup testing.
Proposed Civil penalty of $50,000 dated October 8, 1985	Unit 1 Post-Accident Sampling program was inadequate.	Pending

Uncorrected Violations or Unresolved Items

Licensee responses to four violations and one unresolved item have not been reviewed as of 10/8/85. Review of those items requiring licensee action prior to fuel load will be completed by November 1, 1985.

h. Licensee and Contractor Initiated Stop Work Actions

Licensee Initiated Stop Work Actions

Year	Organization	Reason/Period	Corrective Actions
1978	Bechtel	Radial bends did not meet drawing requirements. Repairs started without NCR or repair instructions documented. (12/13/78-12/15/78)	Rework tag prepared in compliance with WPP/QCI 54.0 As-built survey record attached to NCR. NCR issued C-Y-1078 (12/14/78)
1979	Bechtel	ASME code acceptance criteria not met for ultrasonic testing. (7/31/79-8/21/79)	Test data and results obtained for acceptance of double welded stainless steel pipe.
1981	Bechtel and CE	Insulation being deformed to to fit between Reactor Vessel and RV support columns and technical justification not provided for assurance of quality and integrity of system not violated. (5/5/81-5/21/81)	Deforming of insulation analyzed and accepted. Gaps minimized.
1981	Bechtel	Procedures/instructions or controls not developed to control the connection and charging of batteries to assure safety of personnel and equipment. (8/31/81-9/1/81)	Procedure initiated and PCN written to WPP/QCI 28.0
1981	Bechtel	Five Star Grout 150 used and does not meet required strength. (12/14/81-4/28/82)	Authorization for use deleted from 13-CM-365.
1982	APS Operations	Control of temporary electrical jumpers, temporary lifting of terminal leads, temporary change of setpoints and use of temporary modification not being performed in accordance with 73AC-9ZZ05 but in accordance with 90AC-0ZZ11. (4/1/82-4/2/82)	90AC-0ZZ11 identified as procedure for Startup to use: 73AC-9ZZ05 was revised to be in effect only at fuel load.

Year	Organization	Reason/Period	Corrective Actions
1982	Bechtel	Tendons stored without weather protection. (5/18/82-5/21/82)	All tendons discussed inspected, rust removed and recoated. No signs of pitting or other deficiency. Considered acceptable and covered with plastic for weather protection. Western Concrete personnel reinstructed in requirements for storage of tendons.
1982	Bechtel	Stopped installation of sample supply lines to air radiation monitors as supply sample lines are not designed to requirements of ANSI N13.1 Seat B5. (5/27/82-6/29/82)	Issue of DCP 1SN-SQ-001, Rev. 5. Existing system installed in accordance with current revision of design drawing. Problem resolved on QAF82-45.
1982	Bechtel	Material accountability not being maintained in Zone III area established for this work. (6/2/82-6/2/82)	Complete inventory taken, controlled access material and tool log updated. Removed section pipe spool and inspected. Area inspected, personnel instructed.
1982	Bechtel	Procedure cancelled which governs BPC preparation for area transfer/release. Requirement for inspection/acceptance of cable tray covers and barriers deleted. Requirement for inspection/acceptance of unscheduled commodities has been deleted as was commitment to verify installation/inspection documentation within scope of area transfer. (7/20/82-7/22/82)	BPC will review WPP-QCI 31.0 and write PCN; review Fire Barriers, Cable Tray Covers and Conduit Sealant and incorporate into existing procedures or add to WPP/QCI 31.0
1982	APS Startup	Test Director not certified as qualified for test MG300, FPN P02. (7/21/82-7/22/82)	Test Director will be familiarized with the procedure and familiarization will be documented. QC to be present during test.

Year	Organization	Reason/Period	Corrective Actions
1982	APS Startup	Circuit breaker removed without permission and no clearance was requested nor issued. (8/4/82-8/4/82)	90GA-0ZZ28 revised and Maintenance will assure that personnel are aware of station clearance requirements and test conduct requirements.
1982	BPC Startup and APS Maintenance	Failure to: respond in a timely manner to OTNs; to implement requirements of AD-112 with regard to M&TE usage logs and forms; to respond to calibration overdue notices; to comply with ANSI N45.2.16, Section 3; provide an adequate response to CAR 82-036. (9/17/82-9/18/82)	Corrective actions agreed on by Bechtel and APS QA.
1982	Maintenance	Work Order 482 & 483 issued to set safety valves did not provide adequate instructions to perform the work as required by code, ASME Section XI. (10/14/82-11/21/82)	Procedure initiated in accordance with code and specifications. Special instructions issued with work orders.
1982	APS and Bechtel Startup	Valves SGN-HV-05 and SGN-HV-06 were stroked over a two hour period and allowed approximately 100,000 gals. of highly contaminated H_2O into the secondary side of SG1 and at the time SG2 was unknown. Isolation valves for nitrogen purge thought to be closed were open. (10/19/82-10/19/82)	Performed required actions of steam generator recovery plan.
1983	APS Startup and Operations	Cleanliness of Low Pressure Safety Injection System was indeterminate and continued operation without corrective action could lead to significant damage to LPSI pumps. (1/18/83-1/19/83)	Inspection to determine amount of damage and verification of cleanliness. Potential causes for entry of foreign material into system investigated. Ongoing inspections and evaluation of system cleanliness.

Year	Organization	Reason/Period	Corrective Actions
1983	APS Startup Operations	Startup and Maintenance Personnel were not performing work activities in accordance with approved project procedures. (2/8/83-3/4/83)	90AC-0ZZ02 and 90GA-0ZZ28 were revised and require a review of TER's prior to rework or installation of materials on "Q" class components to determine if an NCR should be written of if it is reportable. All TER's written 1/17/83-2/11/83 to be reviewed.
1983	Bechtel	Typical drawings in FCR 71577E differ significantly from actual field conditions and bolts could be installed incorrectly. Original field conditions will become indeterminate if bolts are installed without adequate directions. (11/21/83-4/14/84)	DCP issued providing necessary drawing clarification.
1983	Bechtel	Reportability evaluation in question. If skewed T joints do not affect safety why are welds being repaired? (11/23/83-12/20/83)	DCPs were transmitted to Resident Engineering for reportability review. Condition not reportable.
1983	Combustion Engineering	Personnel records do not provide documentation of certification of inspectors. (11/28/83-12/2/83)	Inspectors performed demonstration of proficiency.
1983	Innryco, Inc.	Contract PV83-8215 Specification 83-95.71-06-001 did did not adequately implement the applicable technical and quality requirements which must be imposed on Inryco as a result of the scope of work Inryco is to perform. (12/16/83-12/30/83)	Program was reviewed and approved.

Bechtel Initiated Stop Work Actions

Year	Organization	Reason/Period	Corrective Action
1977	Shurtleff & Andrews	E-7018 weld rod not stored in drying ovens. (6/17/77 -6/17/77)	Drying ovens obtained from Bechtel. SDDR issued.
1978	Peabody Test.	Penetrant materials not analyzed. (1/12/78-1/27/78)	Materials tested satisfactorily, procedures revised.
1978	Construction	Unauthorized M-6 solvent used for cleaning. (2/10/78-3/16/78)	SAR Change Notice 814 issued to define qualification parameters. WPP/QCI 14.0 revised.
1979	Construction	Youngstown pipe material is suspect - DER 79-4 (5/18/79-6/22/79)	Radiograph accomplished - no defects found.
1979	Clark Painting	Unacceptable curing operations (11/5/79-11/8/79)	Construction NCRs issued. Supplier QA program improvements initiated.
1980	Construction	Rockbestos Class IE cable may have unqualified splices. DER 80-4 (3/5/80-10/24/80)	Supplier and Bechtel controls implemented. Cable qualified, any cable with repairs is approved for outside containment only.
1980	Construction	HPSI suction pump piping may not be acceptable to pump supplier. DER 79-13 (3/28/80-11/14/80)	Piping arrangements were determined acceptable.
1980	Construction	ITT Grinnell pipe supports were received with undersize fillet welds. DER 80-6 (4/25/80-7/8/80)	Acceptable - based on Code Inquiry, ASME File No. NI-77-406.
1980	Construction	Certain cable pulling stopped due to potential deficiency in Containment rebar detailing. DER 80-19 (6/30/80-10/18/80)	Condition acceptable based on engineering analysis.

YEAR	ORGANIZATION	REASON/PERIOD	CORRECTIVE ACTION
1980	Construction	Unit 3 shell concrete placement stopped based on 80-SW-4 and DER 80-19. (6/30/80 - 10/17/80)	Condition acceptable based on engineering analysis.
1980	Construction	Unit 2 anchor bolts for seal table are inadequately imbedded - DER 80-16 (7/3/80 - 10/22/80)	Design change implemented. Condition corrected.
1980	Construction	Deficiencies on Whiting polar crane and improper processing of Bechtel documents. (10/16/80 - 11/3/80)	NCRs issued, procedures revised, training conducted.
1981	Construction	Concrete placement deficiencies - SI tank. DER 80-24 (10/17/80 - 2/2/81)	Condition acceptable based on engineering analysis.
1981	M.M. Sundt/ Tanner Co.	Concrete truck mix not properly monitored enroute. (11/13/80 - 11/14/80)	NCRs issued and preventive action implemented.
1981	Reliance Truck Company	QA program deficiencies found during audit by Bechtel (2/17/81 - 8/11/81)	Audit findings resolved. Supplier QA Manager replaced.
1981	Construction	Ultrasonic by Peabody not witnessed by Bechtel Level II or III. (2/25/81 - 3/10/81)	NCR issued. WPP/QCI 12.0 revised to clarify requirement.
1981	Construction	Construction Startup testing accomplished without formal procedural control. (5/13/81 - 5/21/81)	NCRs issued, procedures issued.
1981	Construction	Bolts failed due to incorrect hardness. DER 81-14 (6/15/81 - 7/6/81)	NCRs issued. Bolt testing program accomplished. Refer to DER 81-14.

YEAR	ORGANIZATION	REASON/PERIOD	CORRECTIVE ACTION
1981	Otis Elevator	Welding Program not approved by Bechtel. (10/8/81 - 11/16/81)	Welding of brackets affected. Bechtel walkdown determined welds acceptable. Supplier will use Bechtel controlled filler material.
1981	Marathon Steel	Supplier lack of control for subcontracted NDE - field erected tanks. Initiated 12/10/81 - Closed 7/21/83 upon completion of reverification activity.	Procedures developed and implemented.
1982	Comsip	Supplier weld deficiencies on main control panels - at supplier's facility. (4/12/82 - 5/27/82)	SDDR 3236 issued - Comsip weld procedure revised.
1982	Construction	Grouting procedure to accomplish DER 81-35 disposition not approved or controlled. (8/17/82 - 8/20/82)	Condition corrected to meet QA program requirements.
1983	Construction	Engineering procedure for repair of crack in spray pond does not address QC participation. (5/17/83 - 5/20/83)	Approved QC procedure issued.
1983	Construction	Site process sheets for installation of Unit 3 reactor vessel internals not submitted for QA approval.	Review cycle modified, QA review accomplished.
1983	Construction	QA overview of pipe support reinspection program identified unacceptable weld conditions not found by QC. DER 83-74 (12/2/83 - 12/12/83)	Reinspections conducted. QA reverification program implemented to require monthly overview of weld activities.

YEAR	ORGANIZATION	REASON/PERIOD	CORRECTIVE ACTION
1984	Engineering	Validation program of HVAC duct supports by Engineering and supplier does not meet QA program requirements. (3/2/84 - 3/8/84)	Documents were issued which meet QA program requirements.
1984	Construction	Items removed during authorized replacement activities were not properly identified and controlled. (5/3/84 - 6/8/84)	Condition corrected. Procedures revised to clarify requirements.
1984	Construction	Q-listed material shipped to jobsite was not processed in accordance with Columbia's QA program. (11/16 - 12/31/84)	Audit determined that all items met requirements.
1985	Construction	Installation of seismic gap seals and penetrations in Quality Class R and Important to safety systems did not meet BISCO Quality Program.	Open. Pending licensee action.

i. Construction Deficiency Evaluation Reports (DER's) 10 CFR 50.55(e)

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
78-1	Fabrication of Anchor Bolts for Major NSSS components	Documentation reviewed and corrected	Closed 04/11/78 Not reportable
78-2	Void in concrete placement	Void repaired	Closed 05/19/78 Not reportable
78-3	Stainless Steel pipe spools	All pipe and pipe spools from Youngstown Welding and Engineering Company have been rejected, quarantined, and the company removed from the AVL by Pullman Power Products	Final report 11/17/78 Reportable
78-4	Defective fillet welds due to drafting error on DWG's	Drawing corrected	Closed 05/19/78 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
79-1	Voided		
79-2	Weld sequence of Unit #1 and Unit #2 polar cran support girders	Weld sequence verified correct	Final report 06/04/79 Not reportable
79-3	Math error in calculations	Calculation corrected	Closed 06/01/79 Not reportable
79-4	Longitudinal weld defects in S/S pipe	NDE showed no defects	Closed Not reportable
79-5	Polar crane girder welds	Procedures prepared and Implemented	Closed 06/01/79 Not reportable
79-6	2" defective socket weld valves	Coating removed prior to welding	Closed 05/19/79 Not reportable
79-7	Polar crane bracket welds	NDE showed satisfactory results	Closed 11/30/79 Not reportable
79-8	Cracked Auxiliary switches	Switches replaced; 100% reinspection conducted	Closed 08/28/79 Not reportable
79-9	Pipe spool heat treatment	All material tested satisfactorily	Closed 05/19/79 Not reportable
79-10	Safety-related pipe support assemblies in Unit #1	A complete re-inspection program has been initiated with deficiencies being documented, training sessions updated, fillet weld gauges supplied, and increased surveillance	Final report 03/06/80 Reportable
79-12	Inadequate concrete strength achieved with pneumatically placed motor repairs	Specifications and procedures revised, all accessible areas chipped and reworked, and all inaccessible areas evaluated and dispositioned accept-as-is in NCR C-R2040 based on Design Criteria.	Final report 12/30/80 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
79-13	Pump suction pipe configuration on the high pressure safety injection pumps (HPSI)	A review of the various piping arrangements has shown them to be acceptable under all existing guidelines and no further action is required	Final report 12/03/80 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
80-1	Inadequate design of Seismic I instrument supports	Calculations performed; verified satisfactory	Closed 06/27/80 Not reportable
80-2	An error in calculations for tubing support	Calculations re-performed	Closed 06/27/80 Not reportable
80-3	Relating to undersized structural steel fillet welds	Accepted without repair.	Final report 12/24/80 Not reportable
80-4	Class 1E, 600V, Power cable	Procedures revised; applicable cable repaired	Final report 11/05/80 Not reportable
80-5	Class 3, piping system welds	All welds NDE'd satisfactory	Final report 07/09/80 Not Reportable
80-6	Safety-related sway struts	Stop work order notice 80-SW-3 closed and NCR P-A-125 revised to use-as-is.	Final report 07/10/81 Not reportable
80-7	Steam Generator piping welds	Forms revised to show interpass temperature	Final report 07/03/80 Not reportable
80-8	Hilti drop-in anchors	FCR written to delete this type of anchor.	Final report 07/03/80 Not reportable
80-9	Operability failure of vertical fire dampers	All installed and not installed fire dampers found that did not meet the required tolerances were replaced. A re-design has been incorporated to elevate future problems.	Final report 09/15/80 Reportable
80-10	Namco Controls Series EA180 limit switches	Anchor/Darling to provide replacement gaskets for the subject valve limit switches.	Final report 07/03/80 Reportable
80-11	Defective pressure switch in the chlorine detectors	MDA Scientific to provide alternate pressure switches after approval/qualification.	Final report 07/03/80 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
80-12	Pipe spools with the same I.D. number	Paper work corrected	Final report 07/03/80 Not reportable
80-13	Dowel omission during concrete placement	Add dowels prior to concrete placement which tie into the slab.	Final report 07/08/80 Reportable
80-14	Pipe strap, pipe ear full length welding	All installations verified correct	Final report 07/10/80 Not reportable
80-15	Closure of COMSIP, Incorporated containment gas analysis system pump valve	COMSIP to furnish modification kit details and instructions. Units to be modified with proper field change procedures	Final report 07/09/80
80-16	Inadequate embedment of anchor bolts for Units #1 and #2 seal tables	A design change will be implemented so that the seal table is adequately anchored in the reinforced concrete and meets all seismic Category I requirements.	Final report 07/21/80 Reportable
80-17	Inadequate design of reinforcing steel in the walls of the Main Steam Support Structure for Unit #1	The design for all three (3) units has been changed to add the required amount of steel to meet established Design Criteria.	Final report 07/21/80 Reportable
80-18	Blocked tendon sheaths in Unit #1 and #2 containment	Blockages removed and reinspected	Final report 07/21/80 Not reportable
80-19	Reinforcing steel shown in the drawings may not be accurately reflected in the actual design in certain areas	Analysis performed; all stresses are within allowable limits	Final report 11/06/80 Not reportable
80-20	Three (3) shipping studs jammed in reactor vessel	Studs not needed; use-as-is	Final report 07/30/80 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
80-21	Borg-Warner valves with stem extensions could loosen after a few cycles	Valves have been I.D.'ed and NCR'ed. Borg-Warner will supply parts and instructions for rework	Final report 07/29/80 Reportable
80-22	Dowel omission from concrete wall pour of Unit #2 Control Building	Item was NCR'ed. Disposition was to drill and grout the required dowels into wall	Final report 09/24/80 Reportable
80-23	Loose bushings on corner and LADA sway struts	Bechtel verified which struts were in question through Corner & LADA. Bechtel will rework all identified struts using a C&L inspection and repair procedure	Final report 03/02/81 Not reportable
80-24	Excessive shear stresses in Unit #1 & #2 concrete slabs supporting the safety injection tanks 1B, 2A, and 2B	The Bechtel calculations are being updated to be consistent with the actual data as submitted by combustion engineering	Final report 03/30/81 Not reportable
80-25	Improperly grouted Reactor Vessel Supports	Voids repaired	Final report 10/17/80 Not reportable
80-26	Weld deficiencies on the main control panel	None required	Final report 07/14/81 Not reportable
80-27	Fractured bearing capsules on Unit #1 containment polar crane wheels	Shims added; lugs adjusted	Closed 10/20/80
80-28	Potential failure of temperature detection controllers used on CTI-Nuclear Air Handling and Filtration equipment	All controllers were returned to McGraw-Edison for repair or replacement	Final report 10/23/80 Reportable
80-29	Potential motor shaft breakage in Six Hydrogen Monitors	Subject equipment is being reworked per suppliers recommendations	Final report 10/31/80 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
80-30	Borg-Warner 3", 1500#, motor operated gate valve failure to close under operating conditions	Use-as-is	Final report submitted 11/05/82 Not reportable
80-31	Breakers in battery chargers supplied by power conversion (EM-051)	Reworked in accordance with suppliers recommendations	Final report 11/05/80 Reportable
80-32	Pipe cold spring for fit-up	Training session conducted	Closed 01/26/81 Not reportable
80-33	Validity of Marathon CMTR's for CF&I steel	SDDR supplied and	Closed 01/26/81 Not reportable
80-34	Foxboro, Model 270, displays and housings require repair	SCN issued to track equipment better	Closed 11/24/80 Not reportable
80-35	Potential defect of Rosemount Pressure transmitter on MSIV and MFIV	Not used in safety-related systems	Closed 11/12/80 Not reportable
80-36	Loose bushings on ITT Grinnel sway struts	Bushing repaired	Final report 06/19/81 Not reportable
80-37	Concrete void in Unit #2 Control Building Sump	A procedure was developed and implemented to correct this deficiency	Final report 07/09/81 Reportable
80-38	Pipe spools pulled to facilitate installation of pipe supports may overstress welds	Bechtel removed and reinstalled new pipe to design specs and retrain associated personnel in erection of piping	Final report 01/12/81 Reportable
80-39	Cable tray supports not meeting dwg. requirements	Dwgs have been revised, cable trays inspected and reworked as needed	Final report 03/16/81 Reportable
80-40	Control Building raceways and FSAR separation criteria	Drawing revised and wiring relocated as necessary	Closed 12/11/80 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
80-41	Class 1E conductors coming within six inches of non-class 1E conductors on six ITE Gould 480 volt load center isolation relay cabinets	Install additional supports or move termination blocks or provide a barrier satisfying Code requirements for division between Class IE and Non-Class 1E wiring	Final report 01/12/81 Reportable
80-42	Texas bolt material not meeting ASME Section III	Code Case N-310-1 accepted	Final report 01/27/82 Not reportable
80-43	Field weld repair made on Borg-Warner valves	Weld verified satisfactory	Closed 02/06/81 Not reportable
80-44	Missing screws from bottom of control cabinet instruments	None required	Closed 01/08/81 Not reportable
80-45	Additional rebar reinforcement required by drawing, not included in containment placement	Reworked in accordance with engineering disposition (Isolated Case)	Final report 02/04/81 Reportable
80-46	ASME Section XI ultrasonic pre-service examination revealing indications in Pullman power elbows	Indication considered acceptable. Procedures revised accordingly.	Final report 04/30/81 Not reportable
80-47	Deficiency in the containment fuel transfer housing tube design	Stiffner plates added to reduce stresses below allowable limits. Dwg's have been revised to incorporate this change.	Final report 03/18/81 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
81-1	Concrete void in Unit 2 Auxiliary Building	Repaired the void	Closed 02/09/81 Not reportable
81-2	Indications in radiographs of piping spools	8" piping spool was repaired	Final report 04/20/81 Not reportable
81-3	GE fuse blocks may be loose/misaligned	None required	Closed 03/12/81 Not reportable
81-4	Corner and lada sway struts	NCR invalidated	DER cancelled 02/18/81
81-5	Swivel bearings on RCP cannot be rotated	None required	Final report 06/12/81 Not reportable
81-6	Cracked turnbuckle assemblies for Control Room lighting	Assemblies returned to manufacturer and replaced	Final report 04/15/81 Reportable
81-7	Auxiliary feedwater pump nozzle mismatch	Mismatch corrected during fit-up	Closed 05/08/84 Not reportable
81-8	Weld defects on cask loading Gate/Spent Fuel Transfer Gate	Welds repaired per NCR	Closed 04/29/81 Not reportable
81-9	Unacceptable radiograph accepted	Grinding mark repaired and weld re-radiographed	Closed 06/12/81 Not reportable
81-10	Hardened washers not used as required by ASME Code	Code case shall be documented	Final report 06/04/82 Not reportable
81-11	Broken fiber on the armature of 4.16 KV switchgear	Replace broken wire	Final report 10/22/81 Not reportable
81-12	Mating force of 125VDC fuse blocks	NCR dispositioned to perform field modification (retaining clip)	Final report 11/02/82 Not reportable
81-13	4.16KV switchgear wiring violates separation criteria	Wiring errors corrected	Final report 09/18/81 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
81-14	A-354 anchor bolt failures	All accessible bolts hardness tested. All failures will be replaced	Final report 01/28/83 Reportable
81-15	Auxiliary feedwater pump may not deliver feedwater flow within 10 seconds	SARCN to change 10 second requirement to 20 seconds	Final report 02/16/83 Not reportable
81-16	Operated GE breakers may deform	Bearing assemblies were replaced	Final report 07/10/81 Reportable
81-17	Pipe supports fabricated without weld joint preparation	Applicable drawing revised to show fillet weld only or increased fillet weld	Final report 06/08/82 Not reportable
81-18	MCC's contain tie material which may unravel or loosen	Re-tighten wire bundles	Final report 12/30/81 Not reportable
81-19	Possible short circuit in Foxboro recorders	Repair necessary circuits	Final report 08/03/81 Not reportable
81-20	Weld details on pipe support drawing contrary to ASME requirements	Hangers reworked; drawings corrected	Final report 07/30/81 Reportable
81-21	Re-energization problem in ESFAS relay cabinets	Power supplies and circuit boards returned to manufacturer	Closed 07/13/81 Not reportable
81-22	Premature time out of AGASTAT relays	Replaced as required during testing; applicable panel inspected	Final report 10/21/81, Not reportable
81-23	MCC's have bent or broken terminal blocks	Revised installation instructions issued	Closed 08/21/81 Not reportable
81-24	Void in Unit #1 Control Building concrete	Void repaired	Closed 08/19/81 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
81-25	AFW pumps could not be rotated by hand	Storage procedures revised	Final report 02/18/82 Not reportable
81-26	Blocked tubes in Unit #1 Steam Generators	Felt plugs removed	Final report 11/18/81 Not reportable
81-27	Embed plate failed to comply with weld criteria	None required	Closed 08/28/81 Not reportable
81-28	Flexible conduit has split jackets	Conduit replaced	Closed 09/28/81 Not reportable
81-29	Failure of ASTM A490 bolts	Defective bolts replaced inspection program to verify tension in high strength bolts	Final report 11/25/81, 05/11/83 Reportable
81-30	Indication in ASME Code pipe	Indication removed; use-as-is	Final report 01/08/82 Not reportable
81-31	Valve operator material substitution	Affected valves modified	Final report 10/15/81 Reportable
81-32	HPSI bearings and sleeves discolored	None	Final report 11/25/84 Not reportable
81-33	Sleeve bearing shifted in upward direction	Use-as-is	Closed 10/06/81 Not reportable
81-34	Fillet welds on pipe supports not thick enough	Use-as-is	Closed 10/09/81 Not reportable
81-35	Backfill erosion under Unit #1 and #2 Auxiliary and Control buildings	Temporary gas, water lines removed; abandoned lines grouted	Final report 05/20/82, 04/06/83 Reportable
81-36	Incorrect size fillet weld on pipe support	Support standards revised	Closed 10/05/81 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
81-37	Foxboro displays failed environmental testing	Displays modified to qualify environmentally	Final report 01/29/82 Not reportable
81-38	Minimum wall thickness violations	Calculations performed to verify adequacy of pipe	Closed 10/20/81 Not reportable
81-39	Gas Stripper has undocumented section of pipe and welds	Pipe replaced; notifications to affected disciplines	Final report 02/28/83 Not reportable
81-40	Missing vertical dowels in concrete poor in Radwaste Building	Dowels installed	Closed 11/20/81 Not reportable
81-41	Possible stress in Unit #2 containment piping	Use-as-is	Final report 12/29/82 Not reportable
81-42	Unit #2 RCP bearing housing has sand holes	Grinding performed and holes sealed	Final report 01/29/82 Not reportable
81-43	Loose nuts and couplings on Units #1&#2 Steam Generators	NCRs dispositioned to correct deficiencies. Inspection performed on Unit #3 Steam Generator	Final report 09/21/82, 03/29/83
81-44	Pressure regulating valves do not meet design requirements	Regulating valves replaced	Final report 07/06/82 Not reportable
81-45	Unit 1 pressurizer missing lockwires	Screws re-torqued and lockwire installed	Final report 04/19/82 Not reportable
81-46	Borg-Warner valve installed on horizontal plane	Valves modified as required	Final report 12/30/81 Reportable
81-47	Voids in Unit #1 MSSS support floor slab	Grout patch repaired	Final report 10/16/82 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
81-48	Defective cylinder head on Unit #2 DG	Head replaced prior to start-up	Final report 01/05/82 Reportable
81-49	MSSS water level transmitters may give erroneous readings	Flexihose re-installed to prevent erroneous output	Final report 01/05/82, Reportable
81-50	Non-conservatism in design basis water consumption analysis	SARCN to reflect correct design basis	Closed 12/23/81 Not reportable
81-51	DG Control cabinets wiring not separated	Isolation and separation of wiring accomplished per vendor documents	Final report 08/23/84 Reportable
81-52	LPSI and CS pumps have loose anti-rotation pins	Loose pins tack welded	Final report 05/26/82 Not reportable
81-53	Wiring separation violations in Main Control	Barriers erected to meet separation requirements	Final report 05/24/84 Reportable
81-54	Indication in Unit #1 S/G #2 outlet nozzle	Indication removed by grinding. NCR dispositioned. Use-as-is.	Final report 03/03/82 Not reportable
81-55	Water line leak under Auxiliary Building	All temporary water, air and gas lines removed.	Final report 09/29/84
81-56	Unit #1 letdown Heat Exchangers had improperly welded stiffener rings	The weld was repaired	Final report 04/05/82 Not reportable
81-57	Type HMA Auxiliary Relays have excess uninsulated leads	NCR dispositioned rework for affected leads	Final report 07/06/82

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
82-1	Ex-core neutron monitor cables haveing greater length and attenuation than design	New cable purchased/replaced which meets attenuation requirements	Final report 08/26/82 Not reportable
82-2	During an internal inspection (of heat exchangers), 4 welds were found visually unacceptable	Dispositioned "Rework" and since accepted by radiographic examination	Final report 03/22/84 Not reportable
82-3	Diesel generators lube oil strainer baskets require replacements per 10CFR21 by Cooper Energy Services	Replacement of defective baskets	Final report 03/23/82 Reportable
82-4	Design specification drawings for instrument tubing clamps do not show locknuts as required by ASME Code	All installed clamps corrected to comply with the Code	Final report 07/23/84 Reportable
82-5	Unit #2 reactor coolant pump delivered with sand in cooler chamber housing	NCR dispositioned to remove the blasting sand	Final report 06/16/82 Not reportable
82-6	Unit #3 valves (11 total) shipped and removed from receiving area without qualification documentation	Qualification documentation processed. NCR issued against the Unit #3 equipment as required	Final report 02/18/82 Not reportable
82-7	Five Star Special "150" grout used in containment construction observed stratification	WPP/QC1 revised to review manufacturer's final certification. Remove Five Star Special "150" grout from approved list	Final report 04/07/82 Not reportable
82-8	G.E. switchgear has parts not certified by subsuppliers for nuclear use	NCRs dispositioned to replace the identified components correcting all equipment deliveries to the jobsite	Final report 10/25/82 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
82-9	Thermowells in diesel generator lube oil systems by Cooper Energy were not procured to Code	NCRs dispositioned to replace thermowells	Final report 11/04/82 Not reportable
82-10	Code material I.D. nos. obliterated on 8 pipe supports in Unit #2 containment and MSSS due to galvanizing	Addenda incorporated as applicable	Final report 04/27/82 Not reportable
82-11	Six nozzles in the reactor bottom head had porosity in the weld zone, deep surface defects, and nicked welding surfaces	NCR dispositioned to allow tube installation work to proceed	Final report 03/15/82 Not reportable
82-12	Instrument clamps installed without calculations for thermal expansion	NCR dispositioned to review/rework all discrepancies of installation	Final report 06/08/82 Reportable
82-13	Reinforcing bars omitted from Unit #3 fuel transfer tube inspection station	Horizontal rebars installed	Final report 06/04/82 Not reportable
82-14	Units #1 and #2 instrument installation bolting procured to ASME III Code was used without issue control	Fasteners replaced with certified fasteners	Final report 07/07/82 Reportable
82-15	ASME III Code pipe supports not traceable to QIB material	NCRs dispositioned to check and verify each material drawn from storage for installation	Final report 07/14/82 Reportable
82-16	Condensate pots were found to be nonconforming	NCR dispositioned use-as-is	Closed 04/16/82 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
82-17	Bechtel supplier document register errors may allow outdated CE procedures to be used for Unit #1 instrument calibration	The computerized SDR has been corrected, precluding redundant logging	Final report 12/09/82 Not reportable
82-18	Pump motors have metal particles in lube oil and deterioration of internal epoxy coating	NCR dispositioned to flush and replace the motor oil	Final report 09/16/82 Not reportable
82-19	Class IE MCC's burned out due to damage during testing	NCRs dispositioned to replace damaged components	Final report 09/14/82 Not reportable
82-20	20' section of 8" schedule 80 pipe has numerous areas below minimum wall thickness	NCR dispositioned use-as-is for the installed section. The non-installed section returned to manufacturer	Closed 05/05/82 Not reportable
82-21	Cable support structure had shop welds not in accordance with drawing	NCR dispositioned to use-as-is since no rework required	Closed 05/06/82 Not reportable
82-22	Knee-braced steel framing of the MSSS incorrectly	NCR dispositioned use-as-is since no rework required	Closed 06/03/82 Not reportable
82-23	Inspection revealed numerous unauthorized grinding on SI system	Piping spool repaired. Wall thickness verified	Closed 05/14/82 Not reportable
82-24	Weld procedure not prequalified by Ametek-Straza for reactor hot leg pipe stops	Dispositioned use-as-is	Final report 09/15/82 Not reportable
82-25	Q-Class pipe in auxiliary building has visible 2"-4" indications near weld	"Cracks" were actually shallow surface, proving adequate wall thickness	Closed 06/11/82 Not reportable
82-26	Mounting failures of valve position indicating switches	Broken brackets rewelded. Other similar switches inspected	Final report 09/09/82 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
82-27	Fuel building gate supports improperly welded	Returned to supplier for rework	Closed 06/01/82 Not reportable
82-28	Joy fan blade locknuts under-torqued	NCR dispositioned use-as-is	Final report 07/23/82 Not reportable
82-29	Multiple linear indication on Main Feedwater lines	NCRs dispositioned use-as-is	Final report 11/24/82 Not reportable
82-30	Cleanliness control not maintained on Unit #1 VGS	VGS inspected and cleaned	Final report 07/20/82 Not reportable
82-31	Wiring error in the Plant Monitoring System	Correct wiring error	Closed 06/24/82 Not reportable
82-32	Purge dam material in CH system	Material removed and check valve reassembled	Closed 07/02/82 Not reportable
82-33	Leakage past 3" Anchor-Darling check valve	Set screw staked in place	Final report 08/20/82 Not reportable
82-34	Concrete void in Unit #1 MSSS	Repair the void	Final report 07/23/82 Not reportable
82-35	Unit #2 LPSI and CS pump hold down bolts under-torqued	Field personnel instructed on verification of torque valves	Final report 09/29/82 Not reportable
82-36	DG Control Panel wiring not crimped	New lugs installed	Final report 08/06/82 Reportable
82-37	Class 1E wiring improperly crimped	Procedures rewritten for maintenance program hydraulic crimp units. All future crimps to be done at a minimum of 7900 psi	Final report 11/15/82, 07/18/82 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
82-38	Containment isolation valves had actuator bolts loose	Bolts retightened	Final report 01/12/83 Not reportable
82-39	Valve limit switches below flood level in containment	All switches inspected and found satisfactory	Final report 05/16/83 Not reportable
82-40	Unit #1 circuit breakers incorrectly set after testing	Test procedures rewritten; testing program revised	Final report 12/28/82 Reportable
82-41	Improperly crimped lugs in Unit #3 switchgear	New connections installed as applicable	Final report 11/23/82 Reportable
82-42	Unit #1 RCP nozzle weld leak	Stainless steel portion of nozzel replaced by a double piece of incenel	Final report 03/28/83 Reportable
82-43	Improperly crimped lugs in Unit #2	All lugs inspected and repaired as necessary	Final report 02/07/83 Reportable
82-44	Borg-Warner valve operators not qualified for use in containment	Motor operators replaced with qualified operators	Final report 11/15/82 Reportable
82-46	ITT-Barton transmitters do not meet requirements	Transmitters replaced with Rosemount; SARCN to change diversity requirements	Final report 03/15/84 Reportable
82-47	Minimum wall thickness violations on 24" pipe	Inspect and repair the areas of corrosion	Final report 11/19/82 Reportable
82-48	Check valves siezed open by welding heat	Check valves redesigned; all check valves flow tested	Final report 12/07/82 Reportable
82-49	Unit #1 and #2 S/G has pipe support incorrectly welded	Replace beam attachments with applicable brackets	Final report 10/08/82 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
82-50	Flexible conduit couplings may be damaged during seismic event	Conduits modified for proper support	Final report 03/09/84 Reportable
82-51	Pipe line failure in Unit #1 essential cooling system	Plasite repairs effected for applicable piping	Final report 01/09/84 Reportable
82-52	Pipe supports incorrectly installed	Inspections of Unit #1 pipe supports	Final report 11/08/82 Not reportable
82-53	Joy fan blade failure in Unit #1	Containment lines plate repaired; fan blade replaced; all fans reinspected	Final report 08/29/83 Not reportable
82-54	MSIV's have internal corrosion	Valves reinspected and refurbished	Final report 01/26/83 Reportable
82-55	DC motor feeder cables may not provide sufficient operating voltage	Undersized cable replaced; cable sizing procedure revised	Final report 02/23/83 Reportable
82-56	Condensate storage tank scaled down without new seismic calculations	Calculations performed on tank; satisfactory as built	Final report 07/21/83 Not reportable
82-57	Auxiliary feedwater valves are carbon steel instead of stainless steel	Valves replaced with stainless steel bodies	Final report 12/28/82 Reportable
82-58	DG cubicles may not be qualified seismically	DCP issued to anchor cubicles acceptably	Final report 11/22/82 Reportable
82-59	DG crankcase sump coating flaking off	Loose paint removed from sump	Final report 11/22/82 Not reportable
82-60	DG has non-conforming material certification	Defective piston replaced	Final report 11/22/82 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
82-61	RCP diffuser ring cap screws may fail	Cap screw material changed; wedging device added	Final report 01/25/84 Not reportable
82-62	ESFAS DC power supply ground detectors failed testing	Review conducted to assure consistency between test procedures and specifications	Final report 08/03/83 Not reportable
82-63	Calculation error in seismic calculation of RWT	Design analysis showed acceptable as-built condition	Final report 06/27/83 Not reportable
82-64	Dissimilar metal socket welds	Welds replaced with correct material	Final report 11/29/82 Not reportable
82-65	Battery racks may not be seismically qualified	Additional calculations performed. Racks to be replaced as necessary	Closed 11/04/82 Not reportable
82-66	Demineralized water leaked into the reactor vessel	Water removed	Closed 11/10/82 Not reportable
82-67	ESFAS power supplies do not meet specifications	Power supplies replaced	Final report 12/16/82 Not reportable
82-68	Cables to startup transformers may not carry full current	Use-as-is	Final report 09/16/83 Not reportable
82-69	Incorrectly marked fuses in CEDM's	Replaced fuses	Final report 03/08/83 Not reportable
82-70	Improper grinding next to weld	Use-as-is	Closed 11/18/82 Not reportable
82-71	Loose bolt holding yoke to valve body	Re-torqued the bolt	Final report 01/26/83 Not reportable
82-72	Concrete void in Unit #2 containment wall	Grouting program initiated to fill voids	Final report 06/30/83 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
82-73	Pipe support clamps in Unit #2 MSSS may have excess gap	Defective clamps replaced; inspection conducted to identify other deficiencies	Final report 01/31/84 Reportable
82-74	Adjustable resistors have wrong size bolts	Modification effected to replace nuts and washers	Final report 12/23/82 Not reportable
82-75	Refueling water tank suction strainers improperly secured	Improper studs, clips replaced	Final report 12/23/82 Reportable
82-76	Target rock valves do not meet specification/ test requirements	Solenoid operators modified; replace target rock solenoids with valcor	Final report 07/11/84 Reportable
82-77	Foxboro displays failed Class 1E testing	Qualified models supplied for use	Final report 12/23/82 Not reportable
82-78	Improperly crimped lugs in water chiller control panels	All lugs inspected; defective lugs replaced	Final report 01/17/83 Reportable
82-79	Control air tubing violates separation criteria	Tubing separated to meet requirements	Final report 01/17/83 Not reportable
82-80	Low insulation valves for terminals blocks	Terminal blocks replaced with splices	Final report 08/31/84 Not reportable
82-81	R-Class instruments used in lieu of Q-Class in DG control cabinets	Honeywell instruments inspected for conformance	Final report 04/12/83 Reportable
82-82	Mechanical snubbers do not permit 5° movement without binding	NCRs dispositioned to rework the affected snubbers	Final report 01/19/83 Reportable
82-83	DG butterfly valves did not comply with requirements	Valves interchanged and replaced	Closed 01/06/83 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
82-84	Class 1E load centers in Unit #1 had internals damage by space heaters	Space heaters inspected for correct voltage	Final report 04/19/83 Not reportable
82-85	Harlo relay panels in Unit #1 failed testing	Incorrect relays replaced with qualified relays	Final report 03/07/83 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
83-1	DG voltage regulating system may not perform as specified	Transformers repaired per DCP	Final report 02/16/83 Reportable
83-2	Valve operators interchanged	Affected operators were replaced	Final report 05/03/84 Reportable
83-3	Foreign material in bearing housing of Unit 1 HPSI pump	Housing flushed and cleaned	Final report 02/28/84 Not reportable
83-4	Test procedures for air handling units do not meet ANSI 510	Procedures revised; retests performed	Final report 04/27/84 Not reportable
83-5	Weld undercut on pipe in SI system	Use as is	Final report 02/28/83 Not reportable
83-6	Undersize shock suppresor in Unit 1 Containment	Shock suppressor replaced	Final report 02/28/83 Reportable
83-7	Maxi-bolt anchors improperly installed	Replaced affected bolts	Final report 03/04/83 Not reportable
83-8	Hydrogen recombiner failed Qualification test	Existing timers replaced	Final report 02/28/83 Reportable
83-9	Unit 1 LPSI pumps strainers	Both LPSI trains flushed and cleaned	Final report 09/06/83 Not reportable
83-10	Main steam relief valves exceed 5% blowdown unit	Valves returned to manufacturer for refurbishment	Final report 02/28/84 Not reportable
83-11	Exide batteries may leak or corrode at terminals	Stress or batteries relieved; permanent repairs effected	Final report 06/14/83 Not reportable
83-12	480V MCC interlocks may malfunction	Interlocks changed out under GE supervision	Final report 05/03/83 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
83-13	Violation of Tagout requirements	Training conducted on tagging procedures	Final report 07/14/83 Not reportable
83-14	Leaking capacitors in DG relays	Defective relays replaced	Final report 09/27/83 Reportable
83-15	A 354 Anchor bolt bone under installation torque	Torque valve determination methodology changed; drawings revised	Final report 09/23/83 Reportable
83-16	DG govenor and voltage regulator do not reset after trip	DCP issued to correct deficiency	Final report 05/03/83 Reportable
83-17	Fire protection switches failed to meet TMI criteria	All damaged switches replaced	Final report 07/19/83 Reportable
83-18	Pipe supports do not meet Seismic IX requirements	Additional hex nuts installed; drawing revised	Final report 04/28/83 Not reportable
83-19	Shock arrestors do not function properly	Applicable shock arrestors replaced	Final report 01/03/84 Not reportable
83-20	Startup test personnel qualification	All personnel properly trained and qualified	Final report 04/29/83 Not reportable
83-21	LPSI pump operated in violation of procedures	Training provided to operators	Final report 05/06/83 Not reportable
83-22	Hydrogen recombiner circuit breaker failed to operate improperly	Circuit breakers replaced	Final report 10/24/83 Reportable
83-23	MSIV bypass isolation valves failed to close within 5 seconds	Solenoid valves replaced	Closed 05/10/83 Not reportable
83-24	DG lube oil and jacket water heaters do not maintain temperatures	New heaters installed	Final report 05/18/83 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
83-25	Instrument tubing does not have boundary class break	Use-as-is; revised specifications issued	Final report 09/21/83 Not reportable
83-26	BOP ESFAS modules failed testing due to over-heating	Cabinets modified to increase ventilation; drawings revised	Final report 10/28/83 Not reportable
83-27	Need position indication switches functioning improperly	Adjust switches as necessary; O-ring and terminal boards replaced	Closed 04/28/83 Notreportable
83-28	Snubbers installed in violation of reserve range requirements	Use as is; Specification change to clarify procedure	Final report 06/08/83 Not reportable
83-29	Hangers in SI system installed incorrectly	Supports repaired; drawings revised	Final report 06/06/83 Reportable
83-30	A354 bolt broke while torquing on Unit 2 AFW pump	Torque procedures revised; drawings revised	Final report 01/30/84 Not reportable
83-31	Temperature rise in DG control cabinet could exceed design	Ventilation modifications made to provide forced ventilation	Final report 08/23/83 Reportable
83-32	Socket welds in Unit 1 S/G	Transition pieces installed; drawings revised	Final report 02/29/84 Not reportable
83-33	GE breakers with EC-1 trips may have defect	Defects corrected per NCR dispositioned	Final report 06/24/83 Reportable
83-34	Instrument racks in Unit 2 have surface cracks	Defective welds repaired	Final report 09/19/83 Not reportable
83-35	Inverters produced voltage spikes on DC supply bus	High frequency snubber capacitor reworked	Final report 01/09/84 Reportable
83-36	Excessive cycling of hydramotor actuators	Actuators refurbished and retested; Training program conducted	Final report 12/21/83 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
83-37	Missed factory operations on Unit 3 S/G	Defects repaired as appropriate	Final report 12/05/84 Reportable
83-38	Clip angles used for HVAC supports do not meet requirements	Use-as-is	Final report 10/06/83 Not reportable
83-39	Rejectable indications on Unit 1 RCP	Reworked pump case; inspected all other welds	Final report 01/03/84 Not reportable
83-40	Unit 1 LPSI and CS pump motors leaking oil	New lower end brackets installed; new design housing	Final report 02/02/84 Reportable
83-41	Flooding in Control Building	Circulating water intake canal sealed; electrical ducts sealed; all joints sealed	Final report 09/21/83 Reportable
83-42	Failed thermowells in the RCS	Original thermowells replaced with new, redesigned thermowells	Final report 09/14/84 Reportable
83-43	Improper crimp terminations	All relay cabinets by Harlo reinspected; discrepancies will be corrected	Final report 09/27/84 Reportable
83-44	Wiring errors in PPS cabinets	Wiring corrected and retested	Final report 08/15/83 Reportable
83-45	Cable separations in Unit 1 Control Room panels	Wiring redone in accordance with applicable requirements; procedures revised	Final report 09/26/83 Reportable
83-46	Value overtorqued during hydrostatic testing	Adjusted electrical leads and reed switch	Final report 01/09/84 Reportable
83-47	Power supplies may damage instrument conductor penetrations	Additional fuses installed	Final report 10/17/83 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
83-48	Solenoid valves subjected to excessive heat	Refurbished with high temperature connectors, lead wires and O-rings	Final report 10/28/83 Not reportable
83-49	Broken impeller blades/ diffuser bolts	Diffuser redesigned; capscrew numbers increased; impellers backfilled; bearing sleeves replaced	Final report 09/14/84 Not reportable
83-50	Combined with DER 83-49		
83-51	AFW pump failed testing	Surveillance test path eliminated; SARCN to change required flow rates	Final report 09/25/84 Reportable
83-52	Power supplies feed noise into 125 VDC bus	Filter elements installed; annunciators returned for re-work	Final report 12/22/83 Reportable
85-53	Unit 3 embed plates do not meet specification	Replace defective plates plug weld anchor bolts	Final report 10/15/84 Reportable
83-54	Washers found in Unit 1 S/G's	Loose parts removed; remainder of system inspected	Final report 01/17/84 Not reportable
83-55	Thermal liner on cold leg of RCP 1A missing	Liners removed from system	Final report 12/30/84 Not reportable
83-56	Discrepancies with MSIV's	Larger hydraulic reservoir; pump material replaced; relief valve installed	Final report 04/13/84 Reportable
83-57	Cracks in CEA shroud	4 and 12 finger guides removed; snubbers added for lateral support	Final report 09/14/84 Reportable
83-63	HPSI isolation valves failed to open	Readjusted limit switches tack welded yokes to bonnet	Final report 10/9/84 Reportable
83-64	Pressure relief valves failed testing	Test rig replaced	Final report 05/24/84 Not reportable

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DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
83-65	Safety relief valves found dirty and rusted	Valves reconditioned and tested; cleanliness requirements addressed	Final report 01/23/84 Reportable
83-66	AFW pump impeller wear ring fractured	Wear ring material changed; sent to manufacturer for rework	Final report 06/21/84 Reportable
83-67	Ex-core detectors below flood level	Detectors relocated above flood level	Final report 01/23/84 Reportable
83-68	Battery racks constructed with materials not meeting specifications	Non-conforming hardware replaced	Final report 02/09/84 Reportable
83-69	Seismic supports on Posi-Seal valves incorrectly installed	Added additional shaft supports to raise frequency, validating seismic analysis	Final report 07/11/84 Reportable
83-70	Wiring in ERF Cabinets not in conformance with specification	Wiring rerouted; metal barriers installed; color coding of wiring	Final report 02/28/84 Reportable
83-71	Shock arrestors may have generic defect	Snubbers replaced as required	Final report 04/24/84 Reportable
83-72	Undersize welds in Unit 1 Auxiliary Building	Specification revised; Training for QC inspectors	Final report 03/14/84 Not reportable
83-73	Unqualified power supplies installed 1E instrument cabinets	Replaced with safety grade power supplies improved procedures, retrained personnel	Final report 12/6/84 Reportable
83-74	Undersize welds in Unit 1 Auxiliary Building	Inspections conducted on all units pipe supports for weld size	Final report 09/21/84 Not reportable
83-75	Improperly torqued bolts on panel filler assemblies	Bolts retorqued	Final report 07/24/84 Not reportable
83-76	Improper AFW pump logic	Logic diagram revised; modifications on existing logic	Final report 05/07/84 Reportable
83-77	Unit 2 concrete pour contains honeycombs	Honeycombed areas repaired	Final report 07/13/84 Not reportable

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DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
84-1	Methodology used to track required retesting activities	Procedures revised to provide a documented program to track requirements for outstanding preoperational retest after work is performed on a previously tested structure system or component	Final report submitted 04/09/84 Not reportable
84-2	Rust, scale, and pitting in the clevis and arm of several SI and CH valves	NCRs were dispositioned use-as-is	Final report 07/13/84 Not reportable
84-3	Feedwater isolation valves; lower 4-way valve found stuck during testing	Inspect and rework FWIVs and MSIVs to remove unacceptable pipe sealant and replace with Loctite No. 277 prior to fuel load	Final report 05/25/84 Reportable
84-4	External security wiring not in conformance with specification	Contains proprietary security information per 10 CFR 2.790	Closed 01/27/84 Not reportable
84-5	Debris found in reactor internal during movement of the CEA Shroud Assembly from the UGS	NCR dispositioned to clean area and return tools to proper storage	Closed 02/10/84 Not reportable
84-6	Possible deficiencies in absolute and deviation alarm modules	Replaced deficient potentiometers	Final report 12/12/84 Reportable
84-7	Failure to provide corrective action as stated in DER 80-21	NCRs initiated to reinstate rework on valves requiring modifications	Final report 07/13/84 Reportable
84-8	ITT/Barton Model 763 Transmitters do not meet specifications	Transmitters will be replaced or refurbished	Final report 07/24/84 Reportable
84-9	Relating to CAD welding for cathodic protection ground connection	Welding Procedure Spec. Qualified to ASME Section III	Final Report 10/15/84 Not reportable
84-10	Abnormal number of single element RTDs open-circuited	100% inspection revealed no problem with the RTDs	Final report 08/01/84 Not reportable

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DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
84-12	Zone III violations of RCP 1A and S/G #1	The entire Unit 1 RCS returned to Class B cleanliness, and the demonstration test completed	Final report 09/10/84 Not reportable
84-13	Relating to HVAC acceptance criteria	Completed walkdowns. Correct where required. Rouse drawings	Final report 4/29/85 Reportable
84-14	Some studs and nuts installed on SI & RC systems which do not meet ASME requirements for boric acid service	DCN issued to allow the use of SA-194, GR 8M material in the boric acid related systems, as applicable	Closed 03/13/84 Not reportable
84-15	Relating to welds attaching pipe restraint supports less than design-calculated dimensions in Unit 2	Under evaluation. Revised inspection criteria. Corrected deficiencies where required.	Final report 11/15/84 Not reportable
84-16	ESFAS relay cabinets baseplates	Added stiffener plates to cabinets and updated installation DWG's	Final report 08/02/84 Reportable
84-17	The core shroud envelope	Measurements of core shroud panels accomplished as required	Closed 04/23/84 Not reportable
84-18	Wiring error on LPSI pump "B" CS-3 switch	Wiring errors on control switch corrected	Final report 09/10/84 Not reportable
84-19	Improperly installed blind flanges	Nonconforming flanges removed and replaced to meet Piping Material Classifications	Final report 07/30/84 Not reportable
84-20	Displacement of a connecting line in the SI system	Proper operation of SI valve was verified	Final report 10/15/84 Not reportable
84-21	Rosemount transmitters not torqued to specified valve	Replaced mounting hardware. Issuance of specific instructions. Review of Q-class deficiencies.	Final report 12/8/84 Reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
84-22	Unit #1 CEA shroud support contaminated with oil	Contaminated area cleaned and checked for corrosion. Oil retention bars are being added to the Polar Cranes to contain oil in gear case.	Final report 08/01/84 Reportable
84-23	Auxiliary feedwater pump "B" discharge valve to condensate storage tank	No future reflow circ. testing will be done. Recirc. valves V018 and V027 will be replaced by spectacle flanges.	Final report 07/12/84 Reportable
84-24	Limitorque valve operators loose on valve bodies	Retorqued valves in question sampled additional valves clarification of instructions retraining personnel	Final Report 10/23/84 Reportable
84-25	Containment supply registers would not cycle	Vendor ensured proper hardware in the future. Modification of registers.	Final Report 11/27/84 Reportable
84-26	Improperly tested or adjusted interlock	Interlocks will be manually tested unless properly tested personnel are performing the function	Final report 09/21/84 Reportable
84-27	Improperly handled instrumentation from Waldinger Corp.	Reinspection and correction of deficiencies. Review of procedures. Retraining.	Final Report 12/12/84 Reportable
84-28	Diesel generator fuel lines	Modification of attached pipe	Final report 2/15/85 Not reportable
84-29	Build up of material on Unit #2 diesel generator HX	Clean, recoat with plasite lining	Final report 09/25/84 Reportable
84-30	Improper documentation of diesel generator components	Review of all code-related documentation concluded correct and on file; use-as-is	Final report 09/18/84 Not reportable
84-32		Superceded by DER 84-34	

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
84-33	Incorrectly installed hanger support assembly	Weld added	Final report 09/21/84 Not reportable
84-34	Critical friction type high strength connectors	Reworked/repaired keyway bolts. Revision of drawings. Training of personnel.	Final report 10/26/84 Reportable
84-35	Setpoint potentiometers in the PPS drift outside of tolerance	Potentiometers replaced	Final report 09/18/84 Not reportable
84-36	SI valve stalls just off closing seat when opening or closing	Replacement of applicable valves. Inspected downstream piping.	Final report 11/28/84 Reportable
84-37	Unauthorized/unqualified duct sealant	Identification and qualification of sealants. Retrained personnel.	Final report 12/7/85 Reportable
84-38	Improperly welded flange in Unit #2	Rework/repair by adding filler material	Final report 09/18/84 Reportable
84-39	LPSI and containment spray pumps have experienced abnormal rumbling noises	Use-as-is, but do not run pump in the 2500 to 3500 flow range during shutdown cooling mode of operation	Final report 09/26/84 Not reportable
84-40	Unit #2 auxiliary feedwater pump has corrosion	Improved chemistry. Replacement of applicable parts.	Final report 12/14/84 Not reportable
84-41	Adequacy of Cardinal Industrial Products program for supplier qualification	Personnel training. Revised audit procedures. Revised inspection procedures. Instituted user tests.	Final report 12/13/84 Not reportable
84-42	Unqualified torque switches installed on safety related valves	Addressed in DER 83-73	Final report 10/30/84 Not reportable
84-43	HPSI 3" gate valve failure to open	Valve stem cleaned and lubricated	Closed 07/18/84 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
84-44	Fatigue failures of the charging pumps	Implementation of a maintenance and inspection program	Final report 11/28/84 Not reportable
84-45	Relating to spot welding on skid mounting indication and control	Retested stud welds	Final report 10/19/84 Not reportable
84-46	Refueling water tank penetration sleeves; connection would be overstressed during a seismic event	DCPs prepared to perform required grouting work	Final report 09/24/84 Reportable
84-47	Hacksaw blade in the Unit #3 SI system	Weld on line SI 130 was completed	Closed 07/24/84 Not reportable
84-48	Improper material for piep plugs on MSIV	Replaced expansion plugs	Final report 10/18/84 Reportable
84-49	Auxiliary feedwater system experiences hydraulic resonance	Mini-flow individually adjusted for each pump to reduce the vibration	Final report 09/26/84 Reportable
84-50	Main steam isolation valves do not close as required	Reivsed N_2 PT curves. Changed alarm setpoint. Reduced prechange pressure. Increased accumulator operating pressure.	Final Report 10/25/84 Reportable
84-51	Failure of turbine-driven auxiliary feedwater pump to quick start from ambient conditions	Changes initiated to reflect the feedwater delivery time change from 20 to 30 seconds	Final report 09/26/84 Reportable
84-52	Relating to the atmospheric dump valve; a review of the seismic analysis report determined that the base flange of the resistor is overstressed during an SSE and will break	DCPs initiated to increase the thickness of the resistor base flange to two inches	Final report 09/26/84 Not reportable
84-53	Nuts on bolts found loose on PC and CH valves	Reworked valves. Revised procedures. Retrained personnel.	Final report 12/28/84 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
84-54	Containment sump isolation valve	Rework of valve operators	Final report 12/12/84 Reportable
84-55	Non-"Q" material installed in Q1E instrumentation cabinets	Replacement of non-Class modules with Class modules. Revised procedures.	Final report 12/6/84 Reportable
84-56	Fire dampers were found to close inconsistently	Modified and reworked dampers	Final report 12/8/84 Reportable
84-57	Evaluation relating to radioactive waste drain system	SARCN to change time from 10 seconds to 40 seconds	Closed 09/19/84 Not reportable
84-58	Auxiliary feedwater system solenoid valve failed to open in response to AFAS signal	Cleaning or replacement of affected valves	Final report 11/12/84 Not reportable
84-59	MCC cables damaged by fire stops	Replaced damaged cable. Installed metal edge protectors.	Final Report 10/9/84 Reportable.
84-60	Improper lubricant used in Limitorque valve operators	Affected valve operators flushed and relubricated.	Final report 11/12/84. Reportable
84-61	Auxiliary pressurizer spray system-loop valve potential to stop open	Under evaluation. Installation of failed-close isolation valve.	Final report 10/7/84 Not reportable
84-62	Load sequencer did not function properly during safeguards testing	Various hardware and circuitry modifications.	Final report 12/8/84 Not reportable
84-63	SIT vent valve would not close during testing	Cleaning or replacement of affected valves	Final report 11/12/84 Not reportable
84-64	Snubbers will not cycle	Replacement or upgrading of snubbers. Installation of low friction slide plates.	Final report 12/12/84 Reportable
84-65	Inst. leads removed from UGS have shown splitting of outer sheath	Leads removed from Core Support Barrel	Final report 11/12/84 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
84-66	Downcomer feedwater isolation valves	Modifications to actuators.	Final report 10/3/84 Reportable
84-67	Steam generator system valve solenoid operations at low voltage	Cleaning or replacement of affected valves	Final report 11/12/84 Not reportable
84-68	ESC "A" would not resequence due to temperature switch trip after LOP	Installation of new temperature switches. Modification to timers	Final report 11/15/85 Reportable
84-69	Reactor protection system shunt trip contacts	Removal of barrier material from relays	Final report 11/9/84 Not reportable
84-70	Diesel engine "A" in Unit #1 tripped off because of engine overspeed	Lubricate control mechanism	Closed 09/28/84 Not reportable
84-71	A spurious load shed of the 4160 V SWGR S04 Feeder Breaker	None required	Closed 09/17/84 Not reportable
84-72	During pre-op test SI valve torqued out near the closed seat	Modifications of HPSI valves	Final report 12/12/84 Reportable
84-73	Test cards for excore system have an incorrect value for "R26"	Replaced and modified test cards.	Final report 11/5/84 Reportable
84-74	Inverters failed pre-op testing	Replacement of components. Procedure revisions.	Final report 12/14/84 Not reportable
84-75	DG essential exhaust fan fails to start within 5 seconds in Mode 1 or 4 operation		Not reportable
84-76	STAT or temps could be exceeded	Modifications to air supply and exhaust openings.	Final report 12/12/84 Not reportable
84-77	Rosemount transmitters manufactured after January 10, 1984 may not have hermetic seal.	Replacement/ refurbishment of defective transmitters.	Final report 12/6/84 Reportable

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DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
84-78	Valcor valves experience coil failures	Installation of dropping resistors	Final report 11/16/84 Reportable
84-79	Broken terminal lug on DG could cause abnormal temperature rise		Not reportable
84-80	DG "A" tripped off on overspeed when load was removed		Not reportable
84-81	65%-90% hesitation of the open position when 3 of 4 valves are in closed position	Modifications of HPSI valves	Final report 12/12/84 Reportable
84-82	Improper mate between seat and disc of SI check valve		Final report 11/9/84 Not reportable
84-83	HPSI "A" injection lines experiencing cavitation	Modify design of HPSI injection lines	Final report 11/25/84 Not reportable
84-84	Discrepancy between CESSAR Section 5.1.4 and CESSAR Chapter 15, dealing with valve closure time		Final report 10/26/84 Not reportable
84-85	Containment purge valve closing time on Containment Isolation Activation Signal assumed in CESSAR 15-4-8 Amend 6 or later was not assumed in Palo Verde FSAR		Final report 10/26/84 Not reportable
84-88	Grout Missing Under Downcomer Feedwater Lines	Placement of grout under feedwater lines	Final report 11/30/84 Reportable
84-89	Barton Transmitters mounted incorrectly		Final report 12/6/84 Not reportable
84-90	Reactor Vessel Snubber		Final report 12/6/84 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
84-91.	Piece of Metal Found in Unit 2 RCP		Final report 12/6/84 Not reportable
84-93	Suppport Rails in Panel B05	Required bracing installed	Final report 12/8/84 Reportable
84-96	Containment Purge Valve Closure Time	Replacement of motor operators with pneumatic operators	Final Report 12/7/84 Reportable
84-98	HFA Relay Contact Settings	Contacts readjusted	Final Report 12/14/84 Reportable
84-99	Regenerative Heat Exchanger misaligned bolt holes	Bracket restored to original configuration	Final Report 12/14/84 Reportable
84-100	Compression fittings on MCCs	Inspected and tightened compression holding screws. Revised procedures.	Final Report 12/14/84 Reportable
84-101	Containment purge valve failure to open	Reinspection of all applicable valves. Installation of Loctite as required.	Final Report 12/14/84 Reportable
84-102	Missing tack welds on Anchor/Darling swing check valves	Rework of valves as required per A/D direction	Final report 12/14/84 Reportable
84-103	Diesel generator roof hatch	Installation of hatch restraints	Final Report 12/14/84 Reportable
84-106	Spurious Load Shed of BOP ESFAS	Replacement of sequencer module and repair of failed module	Final report 2/27/85 Not reportable
85-01	Undersize taper pin on AFP turbine	Inspection of various bolts	Final report 6/6/85 Reportable
85-02	Silicon Controlled Rectifiers Leakage		Final report 2/26/85 Not reportable

DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
85-03	3-inch Seismic Gap Criteria	Revision of procedures	Final report 6/14/85 Not reportable
85-04	Type "A" fire damper installation	Dampers fastened 1AW manufacturers instructions	Final Report 4/5/85 Reportable
85-05	Improper installation of bus fire stops	Rework/repair of all nonsegregated phase buses	Final report 6/20/85 Reportable
85-07	CE instrument rack deficiencies	Addition of locking nuts new fasteners procured to ASTM requirements	Final report 9/9/85 Not reportable
85-08	Low hysterisis setpoint for AFAS initiation	Proper setpoint adjustment and calibration	Final report 5/30/85
85-12	Cracking in auxiliary building walls	Repair cracks by epoxy injection	Final report 6/14/85 Not reportable
85-14	Low lube oil trip of Emergency diesels	Rewire the four DG low lube oil trip contacts	Final report 6/14/85 Reportable
85-15	Thin wall pipe from Hub, Inc.	None required	Final report 7/15/85 Not reportable
85-16	Cracked spoke on AHU	New hubs fabricated and installed on AHUs	Final report 8/13/85 Reportable
85-19	High hydrazine flow rate	Addition of stiffer springs to Spray Chemical Addition Pumps discharge valves	Final report 7/25/85 Not reportable
85-20	Cracked rocker arm in DG	Under evaluation	Closed by RV
85-22	Colod-Coded Visual indicators breaking off control relays and preventing travel	Inspect and clean all ARD relays and aux. relay cabinets	Final report 7/25/85 Reportable
85-23	DG start failure due to mechanical valve failure	Replacement of valves	Final report 9/9/85 Not reportable

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DER NO.	DESCRIPTION	CORRECTIVE MEASURES	STATUS
85-24	Broken DG turbocharger bolts	Upgrade bolts and increase torque	Final report 9/13/85 Reportable
85-25	AFP on AFAS condition	Under evaluation	Closed by RV
85-26	Containment Purge System	None required	Final report 9/11/85 Not reportable
85-27	Pacific Scientific Pipe clamps	Increase in torque for clamps	Final report 9/18/85 Reportable
85-32	Seismic separation between buildings	Under evaluation	Open
85-33	Bisco fire stops	Under evaluation	Open
85-34	Failure of diesels to pick up loads in override	Under evaluation	Open

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j. Part 21 Notifications

All vendor Part 21 notifications have been reported and corrective action initiated by APS through Construction Deficiency Reports (10 CFR 50.55e).

k. Construction Status

The following safety-related and important to safety structures systems, and components are not complete as of October 8, 1985.

The remaining construction is reportedly relatively minor in nature consisting mainly of efforts to complete corrective actions identified as a result of testing, Deficiency Evaluation Reports, walk-down punchlist items, etc.

Description	Subsystem Designator
Boric Acid Condensate Ion Exchange	CH09
Boric Acid Concentrator	CH10
Containment Electrical and Spare Mechanical Penetrations	CL06
Containment Purge	CP01
Fuel Carriage and Upender Fuel Transfer Tube	FH07
Fuel Handling Tools	FH08
Underwater TV Systems	FH09
Refuel Machine	FH10
CEA Change Platform	FH11
CEA Elevator	FH12
Fuel Pool Seal	FH15
Sprinklers for Auxiliary Building	FP21
Sprinklers for Lower Cable Spreading Room	FP23
Deluge Sprinklers for Safety Injection Pump	FP28
Sprinklers for Personnel Facilities	FP30
Containment Building Hose Stations	FP35
Halon Flooding Protection, Control Building	FP36
Corridor Fire Protection	FP39
Gaseous Radwaste	GR01
Containment HVAC North	HC02
Pre-Access Air Filtration Unit	HC03
TMI Task	HC70
Control Building Normal AHU	HJ01
ESF Switchgear Room, Essential AHU "A"	HJ02
ESF Switchgear Room, Essential AHU "B"	HJ03
Battery Ventilation	HJ06
Containment Hydrogen Control	HP01
Containment Hydrogen Control System	HP70
HVAC, Exhaust	HR02
Evaporator Package	LR04
Concentrate Monitor Tanks	LP05
Containment Radwaste Sump and Pump, West	RD01
Containment Radwaste Sump and Pump, East	RD02
Reactor Cavity Sump and Pumps	RD03

[illegible] Additional [illegible]

[illegible] Page 21 modifications have been [illegible]
[illegible] Conservation [illegible]

[illegible] Effects Study

[illegible] and important to [illegible]
[illegible] October 8, 1965.

[illegible] conservation is reported [illegible]
[illegible] to complete [illegible]
[illegible] Water [illegible] Properties [illegible] pumping [illegible]
[illegible]

[illegible] Submerged [illegible]

Fall Good [illegible] on Bird [illegible]
Fall [illegible] Water
[illegible] and Sport [illegible]
[illegible]
[illegible] Park
Cert [illegible] Under Fa [illegible] Water Tub[illegible]
[illegible]
[illegible] Spring
[illegible] Mountain
[illegible] Water
[illegible]
[illegible] Pond [illegible]
[illegible] Amelia[illegible]
[illegible]
[illegible] Spring[illegible] for Safety [illegible]
[illegible] for Pre[illegible] Wall [illegible]
[illegible] Public [illegible] Stations
[illegible] Fire [illegible], General Building
[illegible] Life Protection
[illegible]
[illegible] Wall
[illegible] Air Filtering Unit
[illegible]
[illegible] Pumping [illegible]
[illegible] Electronic Room, Commercial [illegible]
[illegible] Electronic Room, Recreational [illegible]
[illegible] Vibration
[illegible] Vibration [illegible]
[illegible] Hydro[illegible] Control Sy[illegible]
[illegible]
[illegible]
[illegible] Shade
[illegible] Radio[illegible] Sump and Pump, Water
[illegible] Sump and Pump [illegible]
[illegible] Cavity Sump and Pump

Description	Subsystem Designator
Sump Pumps Discharge Header	RD04
ESF Sump and Pumps "A"	RD05
ESF Sump and Pumps "B"	RD06
Non-ESF Sump and Pumps	RD07
Radwaste Building Sump and Pumps	RD08
Holdup Tank Sump and Pumps	RD09
Fuel Building Sump and Pumps	RD10
Radioactive Waste Drain System	RD70
Radioactive Waste Drain System	RD71
Spent Resin Tanks and Dewatering Pump	SR01
Solidification Package	SR02
Levels C&D (Auxiliary Building)	ZA01
Pipe penetrations Rooms levels A&B	ZA02
Valve Galleries	ZA03
Level A Pipeways & Chases	ZA06
Electrical Penetration Rooms Levels 1&2	ZA07
Level 1 Heat Exchanger Rooms	ZA08
Pipeways, Valve Galleries	ZA10
Containment Building Personnel Access Hatch Area	ZA12
Level 3 Hot Lab, Cold Lab, etc.	ZA14
Tendon Calleries	ZC02
Level 3 Control Room	ZJ01
Corridor Vestibule and Airlock	ZJ04
Stair A for Levels 3&4, Vestibule and Roof	ZJ08
Upper Cable Spreading Room	ZJ11
Cable Shafts	ZJ13
Corridor and Stairs A on Level 1	ZJ16
Lower Cable Spreading Room Level 2	ZJ18
Level 1 Switchgear Room	ZJ19
Level A Air Handling Rooms	ZJ20
Control Building and Auxiliary Building	ZJ23
MSSS Elevation 80'	ZM01
MSSS Elevation 100'	ZM02
MSSS Elevation 120'	ZM03
Controlled Machine Shop	ZR01
Level 1 Truck Bay	ZR02
Level 2 Radwaste Control Room	ZR03
Switchgear Room	ZT07
Level 1 Condensate Deck	ZT13
Level 2 Mezzanine Deck	ZT14
Operations Deck Level 3	ZT17

The construction punchlist contains approximately 1500 detailed items as of October 8, 1985. Many of these items are expected to be resolved as a set. The licensee expects to resolve all of these items prior to fuel load. Region V review of this list will be initiated once this list is reduced to a few hundred items.

[illegible] contains two subtitles containing approximately 1500 detail [illegible] [illegible] 10 [illegible] Many of these items are expected to be resolved [illegible]. The items [illegible] to resolve all of these [illegible] prior to [illegible]. Section V [illegible] of this list will be entitled [illegible] [illegible] detail items.

1. Preoperational Test Results

(1) Preoperational Testing - Preoperational testing will be completed on all safety related or important to safety systems prior to fuel load. The current status is as follows:

Total Tests	Test Complete	Test Results Approved
184	155	103

The remaining 29 tests that are not complete are listed below.

Test on Hold

Procedure #	Description	Percentage Complete
91PE-2CH09	Boric Acid Concentrator Test	85
91PE-2CP01	Containment Purge System	89
91PE-2GR01	Gaseous Radwaste System	85
91PE-2HP01	Hydrogen Purge System	89

Test in Progress

Procedure #	Description	Percentage Complete
91PE-2FP02	Halon 1301 Fire Suppression System	80
91PE-2FP03	Carbon Dioxide Flooding Test	80
91PE-2HT01	Turbine Building HVAC	88
91PE-2LR03	LRS Concentrate Monitor Tanks	45
91PE-2RD01	Radioactive Waste Drainage System	70
91PE-2ZJ01	Polar Crane	80
92PE-2RJ03	Plant Monitoring System	85
92PE-2RI02	Plant Annunciator System	87
92PE-2SB17	Auxiliary Relay Cabinet Test	88
93PE-2SD01	Field Input Verification of Emergency Resource	89

Tests Not Started

Procedure #	Description
91PE-ZFH01 (N)	Dry Sipping
91PE-2FH05	Refueling Machine
91PE-2FH06	Reactor Core Indexing Preoperational
91PE-2FH09	Fuel Assembly Core Position Trial Test
91PE-2FH10	CEA Elevator and Change Platform Test
91PE-2HF02	Control Room Pressurization Test
91PE-2LR02 (N)	LRS Evaporator Package
91PE-2SR02	Solid Radwaste System
91PE-2SS02 (N)	Nuclear Gas Sampling Hydrogen and Analyzer Oxy
92PE-2FH01	Underwater Television System
92PE-2QF06 (N)	Preoperational In Plant Communications Test
92PE-2SB20	DNBR Calculator To PMS Data

[illegible] Tests [illegible]

(1) Procedural Testing - Procedures used to [illegible] will be completed [illegible]

[illegible]	Test Complete	Tests [illegible]
[illegible]	125	[illegible]

The remaining 9 tests that are not completed are listed below.

Test on hold

[illegible]	Application	[illegible]
[illegible]	Data Acquisition [illegible]	[illegible]
[illegible]	Communication Protocol [illegible]	[illegible]
[illegible]	Graphics Radar [illegible]	[illegible]
[illegible]	Hydrologic Tracer System	[illegible]

Testing [illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	Radio [illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

92PE-2SQ01	Radiation Monitoring
93PE-2QD02	Modular AC Emergency Lighting Units
92PE-2SB19	QSPDS Preoperational Test

(N) Test procedure not approved by licensee.

(2) System Acceptance - All safety related or important to safety systems and areas will be accepted by operations to ensure drawings up-to-date and system completion prior to fuel load. The latest status is as follows:

Total Subsystems	Accepted	Subsystems Walked Down
457	391	317

The remaining required subsystems yet to be walked down are FH-07-12 (Fuel Handling), FP-35 (Fire Protection), QD-02 (Emergency Lighting), QM-03 (Special Process Trace Heating), RD-01 (Radioactive Waste Drains), RD-06, RD-70, RD-71, RM-70 (Main Control Board, RZ-70 (CRACS & PASS), SB-72 (Reactor Protection), SR-02 (Solid Radwaste).

Total Areas	Accepted	Walked Down
67	33	67

(3) Surveillance Test Procedures - The surveillance test procedures to be used at Unit 2 are the same as those currently being used at Unit 1 except for unit designation. Seventeen procedures remain to be corrected for Unit 2.

(4) Operations Procedures - With minor exceptions the operating procedures to be used at Unit 2 are the same as those for Unit 1 except for Unit designation. Three procedures remain to be conventive for Unit 2 use.

(5) Significant System Performance Deficiencies

During preoperational testing, the following deficiencies were notable:

High pressure safety injection valves malfunctioned	-	Redesigned system to reduce differential press - increased strength of electrical contact springs.
Microbiological corrosion of spray pond distribution piping.	-	Improved chemical control. Frequency of recirculation increased and initiated a corrosion monitor program.
Excessive heat loss from the primary system to containment was experienced during the hot functional test.	-	An engineering evaluation of the condition is ongoing - not expected to impact on operations.

Cavitation detected in the vicinity of the high pressure injection flow orifices and valves.	-	Reversed the valve orientation and added an additional orifice downstream of the existing orifice.
Loss of auxiliary spray due to trip of charging pumps after turbine trip/reactor trip/SIAS.	-	Monitor VCT level reference leg daily. Revise appropriate procedures to align charging pump suction to RWT after Loss of Offsite Power. Acceptability of design under review by NRR.
Multiplexer malfunctioned causing trip of wrong breakers causing loss of offsite power.	-	Unit 2 being hardwired. Acceptability of design under review by NRR.