

NOV 29 1984

Mr. Al Hendricks
Wisconsin Protective Coatings Company
P. O. Box 216
Green Bay, Wisconsin 54305

Dear Mr. Hendricks:

SUBJECT: FINAL REPORT ON THE BUILDUP OF MATERIAL ON ARIZONA NUCLEAR POWER
PROJECT UNIT 2'S DIESEL GENERATOR HEAT EXCHANGERS

As you requested from Paul Cortland of my staff on November 21, 1984,
a copy of the Arizona Public Service Company letter of September 25, 1984
to the U. S. Nuclear Regulatory Commission is enclosed. The subject of this
letter is, "A 50.55(e) Reportable Condition Relating to Buildup of Material
on Unit 2 Diesel Generator Heat Exchangers."

Sincerely,

Robert L. Baer, Chief
Engineering and Generic
Communications Branch
Division of Emergency Preparedness
and Engineering Response
Office of Inspection and Enforcement

Enclosure: As stated

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50-529

Arizona Public Service Company

September 25, 1984
ANPP-30642-TDS/TRB

U. S. Nuclear Regulatory Commission
Region V
Creekside Oaks Office Park
1450 Maria Lane - Suite 210
Walnut Creek, California 94596-5368

Attention: Mr. T. W. Bishop, Director
Division of Resident
Reactor Projects and Engineering Programs

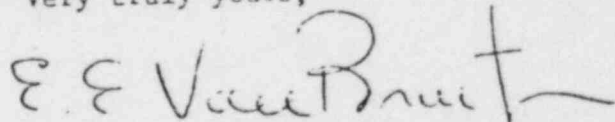
Subject: ~~Final Report - DER 84-29~~
A 50.55(e) Reportable Condition Relating to Buildup Of
Material On Unit 2 Diesel Generator Heat Exchangers.
File: 84-019-026; D.4.33.2

Reference: A) Telephone Conversation between P. Narbut and T. Bradish on
May 11, 1984
B) ANPP-29668, dated June 5, 1984 (Interim Report)

Dear Sir:

Attached is our final written report of the ~~Reportable~~ Deficiency under
10CFR50.55(e), referenced above.

Very truly yours,



E. E. Van Brunt, Jr.
APS Vice President
Nuclear Production
ANPP Project Director

EEVB/TRB/nj
Attachment

cc: See Page Two

PDR ~~84-102-60319~~

COPY

FINAL REPORT - DER 84-29
DEFICIENCY EVALUATION 50.55(e)
ARIZONA PUBLIC SERVICE COMPANY (APS)
PVNGS UNITS 1, 2, & 3

I. Description of Deficiency

The cooling system of the Diesel Generators consists of the following coolers:

| <u>Item No.</u> | <u>Cooler Description</u> | <u>Tag No.</u> |
|-----------------|---------------------------|---|
| 1 | Air After-cooler | MDGA-E01A, E01B, and MDGB-E01A, E01B |
| 2 | Governor Oil Cooler | MDGA-E02 and MDGB-E02 |
| 3 | Fuel Oil Cooler | MDGA-E03 and MDGB-E03 |
| 4 | Lube Oil Cooler | MDGA-E04 and MDGB-E04 |
| 5 | Jacket Water Cooler | MDGA-E05 and MDGB-E05 |

As specified in Bechtel Specification No. MM-018, Cooper Energy Services (CES), the supplier of the Diesel Generators furnished carbon steel epoxy lined (Plasite 7155-H) channels for Items 1, 4, and 5. The channels for Items 2 and 3 are made of cast iron and hence do not require the Plasite lining.

While operating Train A of the Unit 2 Essential Spray Pond System, an inspection of the temporary startup strainer located on the return line to the pond revealed an accumulation of epoxy material. NCR SM-2935 was written to document the condition. The interim disposition of the NCR provided for removal of the channel covers and the floating head covers from the jacket water cooler and lube oil cooler for inspection of the Plasite lining. The inspection revealed that the coolers had extensive failure of the Plasite lining including severe, dense, blistering, and widespread rusting. NCR SM-3938 was written to document the results of the inspection.

Trains A and B air after-coolers were opened and inspected. Lining damage similar to the jacket water and lube oil coolers was discovered and documented on NCR SM-3938.

The governor oil coolers and fuel oil coolers in both trains were also inspected. NCR SM-4064 was written to document the discovery of a significant buildup of a foreign material suspected to be Plasite chips and corrosion products related to the lining failures.

Evaluation

An evaluation by Bechtel Materials and Quality Services has determined the root cause of this deficiency to be related to the following:

- a) lack of profile; surface was too smooth for adequate adhesion of plasite.
- b) the presence of cutting oils on the heat exchanger surface prior to Plasite application.
- c) heat exchangers being sealed prior to complete curing of Plasite.

An inspection of Items 1, 4, and 5 on Unit 1 revealed Plasite lining failure similar to those found on Unit 2. These failures are documented on NCRs MG-2130, 2208, 2209, 2210, and 2211.

Items 2 and 3 on Unit 1 were inspected for a buildup of foreign material as documented by NCR SM-4064 for Unit 2. No foreign material was found in either the heat exchangers or the connecting tubing.

Any Plasite lining failures on Unit 3 will be identified during startup strainer inspections. Letter B/ANPP-E-116242 has requested that Engineering be advised immediately for a first-hand look at debris whenever any pertinent materials are found in startup strainers.

All of the NCRs for Plasite lining failures listed above have been dispositioned as repair per 13-P-ZZG-012, Plasite repair procedure 11.

II. Analysis of Safety Implications

Bechtel Engineering has reviewed the deficiency and has determined that if operation of the system had continued, complete clogging of the five coolers (per diesel engine) could have occurred. High temperature alarms would have alerted operators to the problem, but function of the diesel generator set would be impaired or halted.

Based on the above, this condition is evaluated as reportable under the requirements of 10CFR50.55(e); since, if this condition were to remain uncorrected, it would represent a significant safety condition.

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This project has also evaluated this condition as reportable under 10CFR21.21(b)(3). This report addresses the reporting requirements of the regulation with the exception of subpart (vi), regarding the number and location of such components supplied to other facilities.

III. Corrective Action

Unit 1 Plasite lining failures have been repaired in accordance with power tool cleaning procedure SSPC-SP3 and drawing 13-P-ZZG-012, Plasite repair Procedure 11. This work was performed per the dispositions of and documented on NCRs MG-2130, 2208, 2209, 2210, and 2211.

NCR-SM-3938, which covers the Unit 2 jacket water coolers, lube oil, coolers, and air after-coolers, has been dispositioned as follows:

1. The covers are to be grit blasted to remove coating and to provide a profile 1-5 mils minimum. Recoat with Plasite (may use 9009-1T).
2. End channels (but not tube sheets) of above coolers shall be power tool cleaned in accordance with SSPC-SP-3 until rust and contaminants are removed and a clean roughened surface is attained. Recoat with Plasite (may use 9009-1T).
3. Recoating is to be performed to drawing 13-P-ZZG-012, Rev. 14, Procedure 11.

NCR-SM-4064, which covers the Unit 2 governor oil coolers and the fuel oil coolers, has been dispositioned to clean the coolers to the appropriate cleanliness level.

The corrective actions for Units 1 and 2 address all of the systems, as listed in Section I above, in which Plasite lining was used, and they require complete replacement of the lining. Any Plasite lining problems that are identified in Unit 3 will be handled in the same manner, and the corrective action will be completed prior to fuel load.

A copy of this report will be sent to Cooper Energy Services for their review and disposition in accordance with the requirements of 10CFR21.

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IV.

References

Construction NCRs: MG-2130, MG-2208, MG-2209, MG-2210,
MG-2211.

Startup NCRs: SM-2935, SM-3938, SM-4064.

Letter to J. D. Houchen from W. G. Bingham dated June 15, 1984
(B/ANPP-E-116242).

present levels of this insurance or financial protection it maintains and the sources of this insurance or protection.

(x) A licensee may take reasonable action that departs from a license condition or a technical specification (contained in a license issued under this part) in an emergency when this action is immediately needed to protect the public health and safety and no action consistent with license conditions and technical specifications that can provide adequate or equivalent protection is immediately apparent.

(y) Licensee action permitted by paragraph (x) of this section shall be approved, as a minimum, by a licensed senior operator prior to taking the action.

(z) Each licensee with a utilization facility licensed pursuant to sections 103 or 104b. of the Act shall immediately notify the NRC Operations Center of the occurrence of any event specified in § 50.72 of this part.

(Pub. L. 93-377, 88 Stat. 475; Sec. 201, Pub. L. 93-438, 88 Stat. 1243 (42 U.S.C. 2201, 5841); sec. 161i, Pub. L. 93-703, 68 Stat. 948, sec. 204(b)(1), Pub. L. 93-438, 88 Stat. 1243, 1245 (42 U.S.C. 2201, 5844); sec. 161b., i., and c., Pub. L. 93-703, 68 Stat. 948 (42 U.S.C. 2201); sec. 201, as amended, Pub. L. 93-438, 88 Stat. 1242, Pub. L. 94-79, 89 Stat. 413 (42 U.S.C. 5841))

[21 FR 355, Jan. 19, 1956, as amended at 28 FR 3197, Apr. 3, 1963]

EDITORIAL NOTE: For additional FEDERAL REGISTER citations affecting § 50.54 see the List of CFR Sections Affected in the Finding Aids section of this volume.

EDITORIAL NOTE: In § 50.54, paragraph (w) was added at 47 FR 13754, Mar. 31, 1982. The reporting provision in paragraph (w)(4) has been submitted for approval to the Office of Management and Budget (OMB). It is not effective until OMB approval has been obtained.

§ 50.55 Conditions of construction permits.

Each construction permit shall be subject to the following terms and conditions:

(a) The permit shall state the earliest and latest dates for completion of the construction or modification.

(b) If the proposed construction or modification of the facility is not com-

pleted by the latest completion date, the permit shall expire and all rights thereunder shall be forfeited; *Provided, however*, That upon good cause shown the Commission will extend the completion date for a reasonable period of time. The Commission will recognize, among other things, developmental problems attributable to the experimental nature of the facility or fire, flood, explosion, strike, sabotage, domestic violence, enemy action, an act of the elements, and other acts beyond the control of the permit holder, as a basis for extending the completion date.

(c) Except as modified by this section and § 50.55a, the construction permit shall be subject to the same conditions to which a license is subject.

(d) At or about the time of completion of the construction or modification of the facility, the applicant will file any additional information needed to bring the original application for license up to date, and will file an application for an operating license or an amendment to an application for a license to construct and operate the facility for the issuance of an operating license, as appropriate, as specified in § 50.30(d) of this part.

(e)(1) If the permit is for construction of a nuclear power plant, the holder of the permit shall notify the Commission of each deficiency found in design and construction, which, were it to have remained uncorrected, could have affected adversely the safety of operations of the nuclear power plant at any time throughout the expected lifetime of the plant, and which represents:

(i) A significant breakdown in any portion of the quality assurance program conducted in accordance with the requirements of Appendix B to this part; or

(ii) A significant deficiency in final design as approved and released for construction such that the design does not conform to the criteria and bases stated in the safety analysis report or construction permit; or

(iii) A significant deficiency in construction of or significant damage to a structure, system, or component which will require extensive evaluation, ex-

tensive redesign, or extensive repair to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function; or

(iv) A significant deviation from performance specifications which will require extensive evaluation, extensive redesign, or extensive repair to establish the adequacy of a structure, system, or component to meet the criteria and bases stated in the safety analysis report or construction permit or to otherwise establish the adequacy of the structure, system, or component to perform its intended safety function.

(2) The holder of a construction permit shall within 24 hours notify the appropriate Nuclear Regulatory Commission Regional Office of each reportable deficiency.

(3) The holder of a construction permit shall also submit a written report on a reportable deficiency within thirty (30) days to the appropriate NRC Regional Office shown in Appendix D of Part 20 of this chapter. Copies of such report shall be sent to the Director of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. The report shall include a description of the deficiency, an analysis of the safety implications and the corrective action taken, and sufficient information to permit analysis and evaluation of the deficiency and of the corrective action. If sufficient information is not available for a definitive report to be submitted within 30 days, an interim report containing all available information shall be filed, together with a statement as to when a complete report will be filed.

(4) Remedial action may be taken both prior to and after notification of the Division of Inspection and Enforcement subject to the risk of subsequent disapproval of such action by the Commission.

(f)(1) Each nuclear power plant or fuel reprocessing plant construction permit holder subject to the quality assurance criteria in Appendix B of this part shall implement, pursuant to § 50.34(a)(7) of this part, the quality

Title 10—Energy

NOTIFICATION

§ 21.21 Notification of failure to comply or existence of a defect.

(a) Each individual, corporation, partnership or other entity subject to the regulations in this part shall adopt appropriate procedures to:

(1) Provide for: (i) Evaluating deviations or (ii) informing the licensee or purchaser of the deviation in order that the licensee or purchaser may cause the deviation to be evaluated unless the deviation has been corrected; and

(2) Assure that a director or responsible officer is informed if the construction or operation of a facility, or activity, or a basic component supplied for such facility or activity:

(i) Fails to comply with the Atomic Energy Act of 1954, as amended, or any applicable rule, regulation, order or license of the Commission relating to a substantial safety hazard, or

(ii) Contains a defect. The effective date of this paragraph has been deferred until January 6, 1978.

(b)(1) A director or responsible officer subject to the regulations of this part or a designated person shall notify the Commission when he obtains information reasonably indicating a failure to comply or a defect affecting (i) the construction or operation of a facility or an activity within the United States that is subject to the licensing requirements under Parts 30, 40, 50, 60, 61, 70, 71, or 72 of this chapter and that is within his organization's responsibility or (ii) a basic component that is within his organization's responsibility and is supplied for a facility or an activity within the United States that is subject to the licensing requirements under Parts 30, 40, 50, 60, 61, 70, 71, or 72 of this chapter. The above notification is not required if such individual has actual knowledge that the Commission has been adequately informed of such defect or such failure to comply.

(2) Initial notification required by this paragraph shall be made within two days following receipt of the information. Notification shall be made to the Director, Office of Inspection and

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Enforcement, or to the Administrator of a Regional Office. If initial notification is by means other than written communication, a written report shall be submitted to the appropriate Office within 5 days after the information is obtained. Three copies of each report shall be submitted to the Director, Office of Inspection and Enforcement.

(3) The written report required by this paragraph shall include, but need not be limited to, the following information, to the extent known:

(i) Name and address of the individual or individuals informing the Commission.

(ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

(iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains a defect.

(iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

(v) The date on which the information of such defect or failure to comply was obtained.

(vi) In the case of a basic component which contains a defect or fails to comply, the number and location of all such components in use at, supplied for, or being supplied for one or more facilities or activities subject to the regulations in this part.

(vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

(viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

(4) The director or responsible officer may authorize an individual to provide the notification required by this paragraph, provided that, this shall not relieve the director or responsible officer of his or her responsibility under this paragraph.

(c) Individuals subject to paragraph (b) of this section may be required by

the Commission to supply additional information related to the defect failure to comply.

[42 FR 28893, June 6, 1977, as amended; 46 FR 58283, Dec. 1, 1981; 47 FR 57480, Dec. 27, 1982]

PROCUREMENT DOCUMENTS

§ 21.31 Procurement documents.

Each individual, corporation, partnership or other entity subject to the regulations in this part shall assure that each procurement document for a facility, or a basic component issued by him, her or it on or after January 6, 1978 specifies, when applicable, the provisions of 10 CFR Part 21.31 apply.

INSPECTIONS, RECORDS

§ 21.41 Inspections.

Each individual, corporation, partnership or other entity subject to the regulations in this part shall permit duly authorized representatives of the Commission, to inspect its records, premises, activities, and basic components as necessary to effectuate the purposes of this part.

§ 21.51 Maintenance of records.

(a) Each licensee of a facility or activity subject to the regulations in this part shall maintain such records in connection with the licensed facility or activity as may be required to assure compliance with the regulations in this part.

(b) Each individual, corporation, partnership, or other entity subject to the regulations in this part shall prepare records in connection with the designs, manufacture, fabrication, placement, erection, installation, modification, inspection, or testing of any facility, basic component supplied for any licensed facility or to be used in any licensed activity sufficient to assure compliance with the regulations in this part. After delivery of the facility or component and prior to the destruction of the records relating to evaluations (see § 21.3(g)) or notifications to the Commission (see § 21.21) such records shall be offered to the purchaser of the facility or compo-

§ 21.