

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-341/84-52

Docket No. 50-341

License No. CPPR-87

Licensee: Detroit Edison Company
2000 Second Avenue
Detroit, MI 48226

Facility Name: Enrico Fermi Atomic Power Plant, Unit 2

Inspection At: Fermi 2 Site, Monroe, MI

Inspection Conducted: November 14-15, 1984

Inspector: *L. H. Danielson*
K. D. Ward

11/26/84
Date

Approved By: *L. H. Danielson*
D. H. Danielson, Chief
Materials and Processes Section

11/26/84
Date

Inspection Summary

Inspection on November 14-15, 1984 (Report No. 50-341/84-52(DRS))
Areas Inspected: Announced routine safety inspection of an IE Bulletin, IE Circular, 10 CFR 50.55(e) items, and previous inspection findings. This inspection involved a total of 16 inspector-hours by one NRC inspector including 4 inspector-hours during off-shifts.
Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

Detroit Edison Company (DECo)

- *W. Holland, Vice President
- *W. Miller, Supervisor QA
- *W. Street, Supervisor Civil
- *J. Conen, Engineer
- *S. Martin, Engineer
- P. Nadeau, Licensing Assistant

The inspector also contacted and interviewed other licensee and contractor employees.

*Denotes those present at the exit interview.

2. Previous Inspection Findings

- a. (Closed) Unresolved Item (341/84-21-01): Bolted connections in the slab over torus steel not adequately torqued. DECo analyzed the connections found with loose bolts and found them to be acceptable. However, it was decided that the best option would be to retighten all bolts from an economic and schedule point of view. DECo retightened all the bolts on the slab-over-torus connections and found approximately 80% of the bolts had the designed torque. The remaining 20% of the bolts are being tightened to the original specified torque.

The inspector reviewed various documents relating to the above subject and considers this item closed.

- b. (Open) Open Item (341/84-21-05): Loose bolting in pressure boundary piping. The CAT identified varying degrees of undertorqued pressure-boundary bolts. The intent of initial torque value is to prestress bolts to maintain a tight joint during hydrostatic testing and operation. Visual observations have been made during hydrostatic testing and initial operation of the systems to detect leakage. Periodic observations will be made as the plant begins to operate and during operations; any leaking joints will be retorqued according to the guidance provided in the ASME Code, Section III.
- c. (Closed) Open Item (341/84-21-06): Conflicting valve design conditions. It has been determined that neither the valve nameplate nor the stress reports require change. The applicable design specification for the valves refers to the Master Valve List for obtaining the current correct valve temperature and pressure design conditions. The Master Valve List provides two sets of design requirements:

- . The individual valve pressure rating (ANSI pressure-temperature ratings) given in 150-, 300-, 400-, 600-, and 900-pound ratings.
- . The individual system design pressures and temperatures.

Because of the design pressure and temperature of the system, the valves installed do not exceed the respective valve ANSI ratings, and the valves are qualified for that service.

A design change notice will be written to revise the valve specification to add a note that specific system design pressure and temperature information for a valve be obtained from the Master Valve List and not from the valve nameplate. In the event that a valve needs to be replaced, the only pertinent information is the valve's ANSI rating and not the specific pressure and temperature values of its application.

There are no problems with QA Level I valves relating to discrepancies in documentation; the action of adding clarifying notes to engineering documents will assist user's understanding.

The ASME Code does not require that valve nameplates be changed to account for changes in system pressure and temperature. The only stipulation is that a valve continue to be used within the limits specified by its ANSI rating.

The inspector reviewed various documents relating to the above subject and considers this item closed.

3. Licensee Action on IE Bulletin

(Closed) 341/82-03-1B (IEB 82-03): Stress corrosion cracking in thick wall, large diameter, stainless steel, recirculation system piping at BWR plants. For information only. The inspector verified that the licensee management received the IEB and that it was reviewed for applicability.

4. Licensee Action on Circulars

(Closed) 341/79-25-CC and 341/79-25-1C: Shock arrestor strut assembly interference. For information only. The licensee reviewed the subject Circular and it does not apply to Fermi 2. DECo does not use Bergen Patterson strut assemblies. This item is considered closed.

5. Licensee Action on 10 CFR 50.55(e) Items

- a. (Closed) 341/81-00-EE (43). Dravo NDE problems. Item withdrawn by licensee. The inspector reviewed the final response dated March 5, 1981, withdrawing this item. Dravo re-examined 1221 items which were initially examined by an individual who did not perform a complete magnetic particle (MT) on various items. These items were items that this individual had performed MT on in the last four months of 1980. These re-examinations revealed no rejectable indications in pressure retaining welds and nothing but minor defects in non-pressure retaining welds and base material. It is a conclusion that some MTs were

conducted not in strict accordance with Dravo procedures but were conducted in such a manner that no injurious defects would have remained undetected. It is also a conclusion that although some indications found were greater than the acceptance standards would permit, none of the indications were the results of defects in welds or base material which, if they had remained undetected, would have affected the safety or reliability of the fabrications.

This item is considered closed.

- b. (Closed) 341/82-07-EE (56): MSIVs have been disassembled and reassembled incorrectly. The inspector reviewed the final report, dated August 12, 1983, NCR's and the quality surveillance report. Four motor operated main steam isolation valves located in the turbine building failed to operate due to improper assembly. The packing lantern ring became cocked in the bore of the packing gland. Contributing facts were:

- . Improper assembly of the belleville washers.
- . Over torquing of the packing follower hold down nuts.
- . The horizontal orientation of the valve stem.

This resulted in deep galling and minor scratching of the shaft and crushed packing. The lantern ring, the packing follower and follower yoke were also damaged. This improper on-site assembly of the belleville washers on the packing retainer caused the valve stem to bind, and did not allow the valve to open or close.

These isolation valves were the third valves in a series from the reactor. The valves are ANSI B31.1 valves, and as such, are not "N" stamped, and do not inhibit the safe shutdown of the reactor.

The original torque value given on Valve Drawing P3-8608-K1 was determined to be in error. The torque value for the packing gland nuts was changed pursuant to the following documents:

- . Maintenance Procedure MI-MO 58, Revision 1, approved June 26, 1983.
- . Design Change Request M-180 approved and issued February 11, 1983.

The actions necessary to correct this deficiency have been completed and this item is considered closed.

- c. (Closed) 341/83-14-EE (100): Inconsistencies in the use of UT procedures regarding flued head penetrations. The inspector reviewed the final report dated October 17, 1984, deviation dispositions and quality surveillance reports.

Detroit Edison has completed its investigation and has determined that it is not reportable under 10 CFR 50.55(e). This item concerned unacceptable contractor practices regarding the ultrasonic examination (UT) of flued head structures. This item was originally reported as a potential deficiency on September 19, 1983.

Investigation by Wismer and Becker Quality Assurance and their Level III NDE examiner determined the UT problems were limited to flued head structure anchor blocks to which plate had been added to strengthen the structures. Detroit Edison Quality Assurance and the inspector concurred with this conclusion.

This item is considered closed.

- d. (Closed) 341/83-21-EE (107): All four Byron Jackson RHR pumps have premature wear of the hydrostatic bearings. The inspector reviewed the final response dated July 9, 1984 and NCRs. An examination of the RHR Pump B internals was conducted to determine if the pump was the source of debris (set screws) found in a check valve downstream of the pump. This examination revealed problems with the pump, and the pump internals were sent to the manufacturer for evaluation. The manufacturer, Byron-Jackson, informed Detroit Edison that the amount of wear on the pump hydrostatic bearings was excessive considering the amount of time the pumps had operated.

The following corrective actions were initiated as a result of a joint evaluation conducted by General Electric and Byron-Jackson, and concurred with by Detroit Edison:

- . Metallurgical examination revealed that the cracks were original casting flaws which did not propagate as a result of pump operation. The cracks were subsequently weld repaired.
- . Vibration of the pump assembly loosened the set screws. Replacement set screws have been installed and tack welded.
- . Ineffective hydrostatic bearing design, coupled with pump assembly vibration, caused the damage to the bearings. Grooves behind the bearing surfaces have been removed to improve performance. A harder material than the original has been used in the wear rings to improve wearability and stability.

The following corrective actions were taken to reduce the pump assembly vibration:

- . The pump nozzle to piping interface has been braced.
- . Multiple breakdown orifices have been installed to reduce flow induced vibration.

A ten day test run, including vibration analysis, was conducted and verified the adequacy of the corrective actions.

This item is considered closed.

6. Exit Interview

The inspector met with site representatives (denoted in Persons Contacted paragraph) at the conclusion of the inspection. The inspectors summarized the scope and findings of the inspection noted in this report.