

DmB

Wayne H. Jens
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May 25, 1984
EF2-68548

Mr. James G. Keppler
Regional Administrator
Region III
U. S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Dear Mr. Keppler:

Reference: (1) Fermi 2
NRC Docket No. 50-341
(2) Letter W. H. Jens to J. G. Keppler,
March 27, 1984, EF2-66730

Subject: Interim Report of 10CFR50.55(e) Item 117
Commercial Grade Replacement Parts in QAI
Applications

On February 15, 1984, Detroit Edison's Mr. W. R. Wingfield, Quality Engineer-Construction Quality Assurance, telephoned Mr. F. C. Hawkins of NRC Region III to report a potential deficiency concerning the use of commercial grade replacement parts in safety-related applications at Fermi 2. This was subsequently confirmed in an interim report (Reference 2) of March 27, 1984.

That report provided a description of the potential deficiency, an analysis of the safety implications and corrective action which are still valid. The attachment to this letter provides an update on this item, addressing the methodologies used to justify the use of commercial grade replacement parts, progress to date and schedule.

A significant number of past purchases have been reevaluated, and to date these evaluations confirm that the commercial grade replacement parts were appropriate for the intended applications.

The current schedule indicates that the program will be substantially complete by mid-June. We would like to meet with you or your staff at that time to discuss in more detail our program, its results and any remaining work.

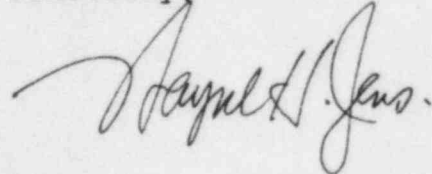
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We will provide another report on this item, either interim or final, when additional information is available. If you have questions concerning this matter, please contact Mr. Lewis P. Bregni, (313) 586-5083.

Sincerely,

A handwritten signature in cursive script, appearing to read "Samuel D. Jones".

cc: P. M. Byron
R. C. DeYoung
R. C. Knop

Methodology

Two approaches are being used to justify the use of commercial grade replacement parts in safety-related applications. Both approaches address the critical performance characteristics, and the environmental as well as seismic requirements of replacement parts. The approach to resolve the OEM issue is also provided. OEMs are purchases from the original manufacturer, who was an approved QAI supplier. However, in some cases the supplier was not on Detroit Edison's Approved Suppliers List (ASL) at the time replacements were made.

1. Comparison Approach Used primarily to review installed mechanical and electrical parts.
 - Review vendor drawings, engineering data and/or vendor catalogs of replacement CQ items versus original Q purchased items for possible changes in design, material and manufacturing process which could affect proper operation of the equipment.
 - Contact the vendor (manufacturer and supplier) to confirm that no changes or modifications were made between the year the replacement CQ item was purchased and the year the original Q item was supplied. Vendor contacts are documented in letters or other appropriate memoranda.
 - For certain items, additional analyses may be performed to supplement the review in case of changes in design, material or manufacturing process. These analyses may include items such as material degradation analysis, seismic analysis, or review and acceptance of plant test results.
 - For certain items, visits to vendor facilities may be performed for review of drawings and/or engineering data and to verify implementation of quality control procedures.
 - Evaluations are documented in an auditable manner, similar to the equipment qualification central files which were audited and accepted by the NRC EQ Branch in December, 1981.
2. Evaluation of CQ Materials Used primarily in the review of installed structural items. This approach is also used to release materials from stock as well as to purchase new CQ materials.

- Establish engineering criteria and verification requirements. Engineering criteria includes critical performance characteristics, environmental and seismic requirements. Verification requirements are determined to assure engineering criteria are met.
 - Statistically valid sampling plans are used for the verification process where appropriate.
 - Verification includes inspection, and where appropriate, testing such as hardness, strength, voltage, current, etc.
 - Auditable records are established to support the engineering evaluations and conclusions, and the verification of CQ items.
3. OEM Purchase The approach to this category of past purchases involves a review of each supplier's history of QA program acceptance by either Edison or other nuclear industry purchases, during periods when they were not listed on the Edison Approved Suppliers List (ASL).

The information developed in this review will be evaluated against purchases made by Edison, during these periods when the supplier was not on the ASL, to establish whether or not there is likelihood that the supplier of the part had an acceptable QA program in place, and that there is a reasonable basis to conclude that it was effectively implemented at the time of manufacture of the part supplied to Edison. Items which cannot reasonably be justified in this manner will be resolved using the CQ methodology previously described.

Progress To Date and Schedule

The evaluations to date have justified the use of these replacement parts in safety-related applications. We do not anticipate any problem areas for the remainder of the work. However, should they occur, justifications for interim operation as required in 10CFR50.49 for electrical equipment, will be generated and submitted for approval.

1. Installed Materials

a. Electrical Equipment:

Electrical items represent thirty-five percent (35%) of the total item population of which, one third is located in harsh environment areas.

Electrical materials mainly include parts of relays, breakers, overload heaters, transmitters, transducers, switches, valve motor operators, terminal blocks and connectors. There are approximately 150 types, by manufacturer and part number, of electrical parts in harsh environment and an additional 250 types in mild environment.

o Harsh Environment Electrical Equipment: involves CQ parts associated with 20 safety-related systems.

- Completed 14 systems. Approximately 90 record packages have been prepared representing 90 equipment types by manufacturer and part number.

- All items evaluated to date have been confirmed satisfactory.

- Estimated completion schedule: In June 1984.

o Mild Environment Electrical Equipment:

- The scope of CQ parts located in mild environments will be determined following the completion of the harsh environment work. It should be noted that once the 150 harsh environment evaluations are completed, they can be used to qualify the same material types in mild environment areas. Because the results of the harsh environment qualification effort to date have resulted in no impact, and the pending mild environment work will involve even less stringent qualification criteria, Detroit Edison believes that this remaining work should not result in any impact.

b. Mechanical Equipment:

Mechanical materials represent five percent (5%) of the total item populations. Materials mainly include gaskets, packing, seals, O-rings, grease, oil and lubricant. There are approximately 80 types of materials by manufacturer name and model/part number in both harsh and mild environment areas.

- Preliminary evaluations have been completed and results to date indicate that the material in this category is entirely satisfactory.
- File packages are being prepared.
- No additional materials have been identified in mild environment areas.
- Estimated completion schedule: In June 1984.

c. Structural Materials:

Structural materials represent the remainder (60%) of the total item population. Structural materials include nuts, bolts, anchors, and support materials. These materials can be divided into 3 categories.

- o Alpha Group: Addresses mainly mild steel which is inherently dependable and insensitive to premature failure. Items such as A307 bolts and A36 structural steel are included in this group. The Alpha group represents 90% of the item types or approximately 700 purchase requisition line items. All Alpha items have been evaluated and are considered to be satisfactory.
- o Beta Group: Addresses high strength carbon steel. These items are inherently dependable but require some verification testing. Items such as A490 bolts and A514 structural steel are included in this group. The Beta group represents 8% of the item types or approximately 70 purchase requisition line items. Appropriate confirmatory testing is in progress and will be completed by July 1984. Based on results to date, no qualification problems are anticipated for this material group.
- o Gamma Group: Addresses stainless steel and other potentially sensitive items from a life utilization standpoint. Items such as stainless steel bolting materials and cadweld splices are included in this category. The Gamma group represents 2% of the item types or approximately 10 purchase requisition line items. The qualification plan for these items

has been established. Evaluation is in progress and will be completed during July, 1984. No immediate qualification problems are anticipated.

2. Stock and New Purchased Materials

The necessary procedural controls are in place to control the purchase and issuance of CQ materials. Electrical, mechanical and structural materials are being purchased or released from stock to support plant testing after they have been evaluated. In some cases, materials were conditionally released. Ongoing evaluations and/or confirmatory testing will be used to close out conditional releases using the methodology identified above.