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Docket No. 50-400

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Mr. E. E. Utley, Senior Executive
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Dear Mr. Utley:

Subject: Shearon Harris Unit 1 - Request for Additional Information on the
Preservice Inspection (PSI) Program Relief Requests

The NRC staff, with the technical assistance of DOE contractors from the Idaho National Engineering Laboratory, have reviewed your submittals dated September 23, 1985 and January 7, 1986, regarding your PSI Program relief requests. As a result of this review, we find that additional information, delineated in the enclosure, is required in order to continue our evaluation. We have also enclosed Appendix A which provides guidance for preparing requests for relief from certain Code requirements pursuant to 10 CFR 50.55a(a)(3).

The reporting and/or recordkeeping requirements of this letter affect fewer than ten respondents; therefore, OMB clearance is not required under P.L. 96-511.

Sincerely,

Bart Buckley, Project Manager
PWR Project Directorate #2
Division of PWR Licensing-A
Office of Nuclear Reactor Regulation

Enclosures:
As stated

cc: See next page

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CAROLINA POWER AND LIGHT COMPANY
SHEARON HARRIS NUCLEAR POWER PLANT, UNIT 1
DOCKET NUMBER 50-400

Review of Preservice Inspection (PSI) Program Relief Requests and Request for Additional Information

I. Scope/Status of Review

Inservice inspection (ISI) programs are based on the requirements of 10 CFR 50.55a(g), as detailed in ASME Code Section XI, "Rules for Inservice Inspection of Nuclear Power Plant Components." ISI includes a preservice baseline inspection prior to the initial plant startup. The staff has reviewed the available information in the Shearon Harris, Unit 1, FSAR through Amendment 22 dated September 1985, the Shearon Harris PSI Program Plan through Revision 2 submitted September 23, 1985, and a January 7, 1986 submittal containing a listing of requests for relief from the ASME Code Section XI requirements that the Applicant has determined not practical for Shearon Harris Unit 1.

II. Staff Evaluation

In the January 7, 1986 submittal, the Applicant stated that the relief request information updates and supersedes the information submitted in Revision 2 of the PSI Program Plan dated September 23, 1985 and contains a complete listing of known specific relief requests to date. The staff has concluded that the following information and/or clarification is required in order to complete the review of the preservice inspection program and provide a supplemental input to Sections 5.2.4, and 6.6 of the Safety Evaluation Report (SER):

- A. The text for the individual relief requests is generic and not specific for the components for which relief is being requested. As an example, Relief Request No. R1-001 contains one Class 1 elbow-to-pipe circumferential weld, Code Category B-J, Item B9.11, which requires both 100% volumetric and surface examinations. The text states that this weld requires surface and/or volumetric examinations to be performed as applicable, and that relief is being requested from examinations due to structural interferences such as: permanent hangers, saddle plates, support structures, or intervening members for other systems. The text also states that for Alternate Examinations: Where the weld was identified as being inaccessible to the volumetric examination, surface examinations were used in lieu of the volumetric examinations, and visual examinations (VT-1) were performed on components which required surface examinations, when accessible. The staff notes that a surface examination cannot be considered an alternate examination when the surface examination is a Code requirement. Many of the relief requests (e.g. R1-004 and R1-006) state that alternate examination techniques were considered and, if feasible, used. The Applicant should discuss the specific alternative examinations that were used and include

the extent of these examinations. Relief request R1-005 requests relief from visual examinations on the internal surfaces of pump casings and valve bodies, exceeding 4 inch nominal pipe size, and contains no listing of the components for which relief is being requested.

10 CFR 50.55a(a)(3) states that the Applicant must demonstrate that either (i) proposed alternatives would provide an acceptable level of quality and safety, or (ii) compliance with the specified requirements of this section would result in hardship or unusual difficulties without a compensating increase in the level of quality and safety. In order for the staff to determine if relief from the Code-required examinations is justified, the relief request submittal should be revised to be more specific and, as a minimum, include the following information:

1. List the specific ASME Code Section XI requirements for the components on which relief is being requested.
 2. List the individual components applicable to the relief request.
 3. If the Section XI Code required examination cannot be performed for PSI because of a limitation or obstruction, describe or provide drawings showing the specific limitation or obstruction, and provide an estimate of the percentage of the Code required PSI examination that was completed on the individual components requiring relief.
 4. If an alternative examination has been performed, describe the specific examination and the extent of the examination.
 5. Describe the ASME Code Section III fabrication examinations that were completed and documented during construction for the specific components listed in the relief requests.
- B. Typical observations and inconsistencies that the staff noted during review of the January 7, 1986 submittal, include the following:
1. Most of the relief requests submitted are listed by the Applicant as being Preservice/Inservice Applicable. The staff evaluations will be included as part of the review of the PSI Program Plan and will only be applicable for PSI and not for ISI.
 2. In the Component Tables (Tab 2 and Tab 3) it is noted that some components are listed more than one time depending on the examination description as outlined in the Examination Required Section (Tab 9). This can be confusing to the reviewer with regards to the total number of components for which relief is being requested.

3. Relief requests R1-003, R2-001, and R2-003 lists 135 welds in the RHR, ECC, and CHR systems requiring relief. The table listing these welds references Q250.1 under ITEM NO. Provide a written response to NRC Question 250.1 and explain how these welds were selected for examination and why relief is requested. If they were selected on a sample plan, possibly other welds could be selected which can be volumetrically examined. Also for these 135 welds, the Code P03-01 is used under EXREQ (Examination Requirement Source). Examination Requirement Source (Tab 10), page 36, defines P03-01 as "available for future use." Explain this examination requirement.
4. Relief request R1-007 lists two Code Category B-J, Item B9.31, branch connections. This relief request states that the branch connections are not conducive to volumetric examination and provides no explanation or drawings to describe the size of the branch connections or why the volumetric examination cannot be performed. This relief request could also be included in relief request R1-003 which includes Code Category B-J, Item B9.31, branch connections.
5. Relief request R1-009 (Tab 1) is confusing as the text states that two (2) capscrews are covered by the reactor coolant pump shaft proximity probe mount, and are not accessible for examination. This condition exists on all three pumps for a total of six (6) capscrews that are not accessible. The table (Tab 2) lists eight (8) capscrews on each pump for a total of twenty four (24) requiring relief.
6. Relief request R2-001 is titled "Pressure Retaining Piping Welds", however the relief request also contains, Code Category C-C, Item C3.20, integrally welded attachments.
7. Relief request R2-003 (Tab 1) is listed as Code Category C-F, Items C5.21 and C5.11, which are circumferential pipe welds. The Component Table (Tab 3) for R2-003 under COMPDES (component description) shows several welds listed as PLSW,P which is defined by Component Description (Tab 6), as longitudinal seam welds in pipe.
8. Relief request R2-004 includes Code Categories C-C and C-F, Items C3.20 and C5.11 respectively, which require only surface examinations. The relief request text (Tab 1) states that the Code-requirement is surface and/or volumetric examination. Also the Component Table (Tab 3) for R2-004 shows inconsistencies when the Component Description (Tab 6) is compared against the Code Category and Code Item numbers. Component Description PC,SDFP-PC,RED is listed as Code Category C-C, Item C3.20, in one place and Code Category C-F, Item 5.11, in another place. A Component Description PC,RED-PC,PIPE is listed as Code Category C-C, Item C3.20. Either the Code Categories or the component design designations are incorrect.

9. In relief request R2-005, the basis for relief does not discuss any specific reasons why the Code-required examinations cannot be performed nor does the alternative examination section discuss any alternative examinations.

NOTE: The above items describe only typical observations and inconsistencies and are not intended to indicate a complete staff review.

From this information, it is suggested that the Applicant review the relief request submittal for these types of inconsistencies and make the necessary corrections prior to resubmittal.

APPENDIX A

GUIDANCE FOR PREPARING REQUESTS FOR RELIEF FROM CERTAIN CODE REQUIREMENTS PURSUANT TO 10 CRF 50.55a(a)(3)

A. Description of Requests for Relief

The guidance in this enclosure is intended to illustrate the type and extent of information that is necessary for "request for relief" of items that cannot be fully inspected to the requirements of Section XI of the ASME Code. The preservice/in-service inspection program should identify the inspection and pressure testing requirements of the applicable portion of Section XI that are deemed impractical because of the limitation of design, geometry, radiation considerations or materials of construction of the components. The request for relief should provide the information requested in the following section of this appendix for the inspections and pressure tests identified above.

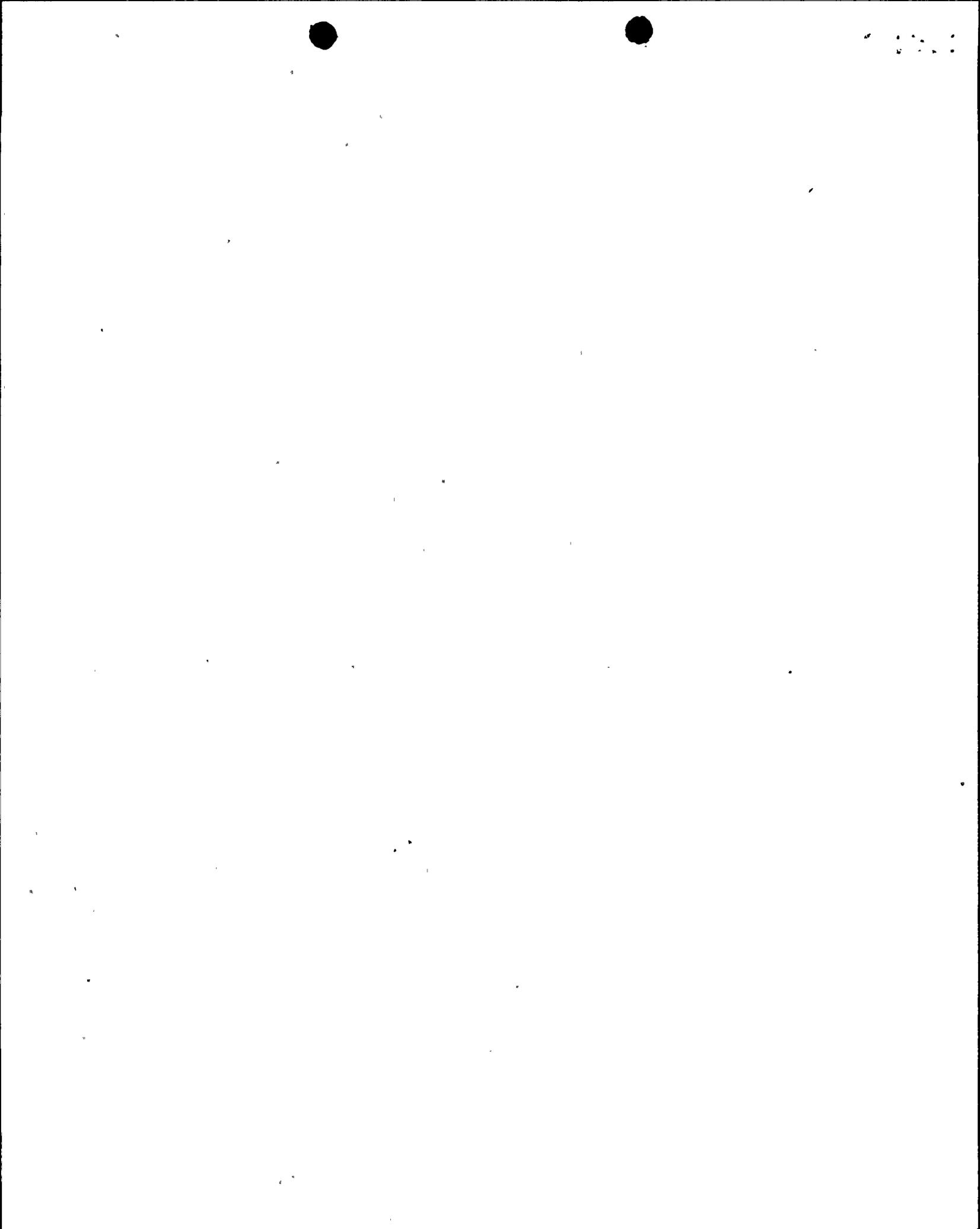
B. Request for Relief From Certain Inspection and Testing Requirements

Many requests for relief from testing requirements submitted by licensees have not been supported by adequate descriptive and detailed technical information. This detailed information is necessary to: (1) document the impracticality of the ASME Code requirements within the limitations of design, geometry and materials of construction of components; and (2) determine whether the use of alternatives will provide an acceptable level of quality and safety.

Relief request submitted with a justification such as "impractical", "inaccessible", or any other categorical basis, require additional information to permit an evaluation of that relief request. The objective of the guidance provided in this section is to illustrate the extent of the information that is required to make a proper evaluation and to adequately document the basis for granting the relief in the Safety Evaluation Report. Subsequent requests for additional information and delays in completing the review can be considerably reduced if this information is provided initially in the licensee's submittal.

For each relief request submitted, the following information should be included:

1. An identification of the component(s) and the examination requirement for which relief is requested.
2. The number of items associated with the requested relief.
3. The ASME Code class.
4. An identification of the specific ASME Code requirement that has been determined to be impractical.
5. The information to support the determination that the requirement is impractical; i.e., state and explain the basis for requesting



relief. If the Code required examination cannot be performed because of a limitation or obstruction, describe or provide drawings showing the specific limitation or obstruction, and provide an estimate of the percentage of the Code required examination that can be completed on the individual components requiring relief.

6. An identification of the alternative examinations that are proposed: (1) in lieu of the requirements of Section XI; or (b) to supplement examinations performed partially in compliance with the requirements of Section XI.
7. A description of the ASME Code Section III fabrication examinations that were completed and documented during construction for the specific components listed in the relief requests.
8. A description and justification of any changes expected in the overall level of plant safety by performing the proposed alternative examination in lieu of the examination required by Section XI. If it is not possible to perform alternate examinations, discuss the impact on the overall level of plant quality and safety.

For inservice inspection, provide the following additional information regarding the inspection frequency:

1. State when the request for relief would apply during the inspection period or interval (i.e., whether the request is to defer an examination.)
2. State when the proposed alternative examinations will be implemented and performed.
3. State the time period for which the requested relief is needed.

Technical justification or data must be submitted to support the relief request. Opinions without substantiation that a change will not affect the quality level are unsatisfactory. If the relief is requested for inaccessibility, a detailed description or drawing which depicts the inaccessibility must accompany the request. A relief request is not required for tests prescribed in Section XI that do not apply to your facility. A statement of "N/ A" (not applicable) or "none" will suffice.

C. Request for Relief for Radiation Considerations

Exposures of test personnel to radiation to accomplish the examinations prescribed in Section XI of the ASME Code can be an important factor in determining whether, or under what conditions, an examination must be performed. A request for relief must be submitted by the licensee in the manner described above for inaccessibility and must be subsequently approved by the NRC staff.

Some of the radiation considerations will only be known at the time of the test. However, from experience at operating facilities, the licensee generally is aware of those areas where relief will be necessary and should submit as a minimum, the following information with the request for relief:

1. The total estimated man-rem exposure involved in the examination.
2. The radiation levels at the test area.
3. Flushing or shielding capabilities which might reduce radiation levels.
4. A proposal for alternate inspection techniques.
5. A discussion of the considerations involved in remote inspections.
6. Similar welds in redundant systems or similar welds in the same systems which can be inspected.
7. The results of preservice inspection and any inservice results for the welds for which the relief is being requested.
8. A discussion of the failure consequences of the weld which would not be examined.