

PHILADELPHIA ELECTRIC COMPANY

NUCLEAR GROUP HEADQUARTERS

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NUCLEAR SERVICES DEPARTMENT

October 5, 1992

Docket Nos. 50-352
50-353

License Nos. NPF-39
NPF-85

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Subject: Limerick Generating Station, Units 1 and 2
Relief Request for Performing Bolt Removal
Requirements

Gentlemen:

Attached for review and approval is Relief Request No. RR-15 for the Limerick Generating Station (LGS), Units 1 and 2, American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Section III, Class 1 pressure retaining components, ASME Code, Section XI Examination Category B-P, Item Numbers B15.10 through B15.71. Specifically, we are requesting relief from disassembling a bolted connection solely for performing a visual inspection to determine if leakage is the result of corrosion of the bolting material as required by paragraph IWA 5250(a)(2) of ASME Code, Section XI.

The disassembly of a bolted connection is not considered to be prudent in all cases. In performing bolt removal, the situation exists that additional costs and radiation exposure may be incurred. There also is a potential negative impact on plant performance. Justification for relief is explained in the attached relief request.

We would appreciate your cooperation in providing an expeditious review of this request, as we would like to have approval by the start of the LGS Unit 2 refueling outage. The outage is currently scheduled to begin on January 23, 1992.

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If you have any questions or require additional information, please do not hesitate to contact us.

Very truly yours,



G. J. Beck, Manager
Licensing Section

Attachment

cc: T. T. Martin, Administrator, Region I, USNRC w/ attachment
T. J. Kenny, LGS Senior Resident Inspector, USNRC w/ attachment

RELIEF REQUEST NO. RR-15

I. IDENTIFICATION OF COMPONENTS

All Class 1 pressure retaining components, Code Examination Category B-P, Item Numbers B15.10 through B15.71.

II. CODE REQUIREMENTS FROM WHICH RELIEF IS REQUESTED

ASME Section XI, 1986 Edition, Examination Category B-P, requires a VT-2 visual examination of all Class 1 components during the conduct of the system leakage or hydrostatic pressure test. The purpose of the VT-2 examination is to detect leakage. The acceptance standard for dealing with the results of this examination is contained in paragraph IWB-3522. This acceptance standard requires correction of specific relevant conditions, to meet the requirements of IWB-3142 and IWA-5250, prior to continued service. IWA-5250(a)(2) indicates that if leakage occurs at a bolted connection the bolting shall be removed, VT-3 examined for corrosion, and evaluated in accordance with IWA-3100.

Relief is requested from performing the deliberate bolt removal requirement of IWA-5250(a)(2) if leakage occurs at a bolted connection.

III. BASIS FOR RELIEF

The requirement to disassemble the bolted connection solely for the purpose of performing a visual examination of the bolting for corrosion is not always logical.

Bolted connections which experience leakage could have been reworked during the current plant or system outage. If the connection was reworked, all associated bolting, whether original or replaced, would have been visually examined prior to reassembly of the connection. Additionally, this bolting material would likely not have been exposed to system service, thereby minimizing the possibilities of corrosion. This position is supported

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by the ASME Section XI interpretation IN90-023, which was issued on September 10, 1991.

Additionally, a portion of the pressure retaining bolting used in Class 1 applications at LGS is made up of stainless steel materials. These materials are not as susceptible to corrosion (wastage) as are carbon or low alloy materials. Also, since the normal Class 1 pressure boundary of a BWR facility contains only demineralized water, the chances of severe corrosion are minimal. While stainless steel bolting materials are susceptible to stress corrosion cracking under certain conditions, detection of this type of corrosion on the bolting material is difficult using the VT-3 visual examination method. Therefore, removal and examination of the bolting will have little significance.

Finally, if evidence exists which indicates that the leakage found is not a preexisting condition and the leakage is stopped, the concern for corrosion of the bolting material is reduced.

The cost and added radiation exposure associated with the requirement to disassemble and examine the bolting, along with the inherent need to repeat all or portions of the associated pressure test and the potential impact on plant operations, far outweigh the increase in safety resulting from performance of this examination.

IV. ALTERNATE PROVISIONS

If during the conduct of a Section XI pressure test, the VT-2 examination reveals a relevant condition as listed in IWB-3522, at a Class 1 bolted connection which has been in service, the entire connection will be visually examined using the VT-1 method. This examination will be conducted to determine the overall condition of the connection, with respect to corrosion. The examination will be conducted with all bolting in place, under tension. The results of this examination and additional factors will be used to perform an evaluation of the condition of the bolted connection. Additional factors which may be used in the evaluation could include but are not limited to: type of material used for the bolting, the nature of the leak itself, the service age of the bolting material, date of previous visual examination of bolting, scheduled maintenance for the subject joint,

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results of ISI volumetric examinations, confirmation of leak stoppage.

If any of the factors used for the evaluation indicate a potential for degradation of the bolting due to corrosion, then one bolt will be removed and VT-1 (not VT-3) examined for corrosion, and evaluated in accordance with IWA-3100. The bolt selected for removal and examination will be the bolt most likely to be affected by the subject leakage. When the removed bolt has evidence of degradation, all the remaining bolting in the connection shall be removed, VT-1 examined and evaluated in accordance with IWA-3100.

If the results of the evaluation indicate that bolting degradation is not expected, bolting need not be removed. A VT-1 reexamination of the subject connection (in place, under tension) shall be conducted at the next refueling outage, unless the connection is reworked due to maintenance or modification activities.

The requirement for removal of only one bolt is supported by the fact that the Section XI Code reflects this concept in the 1991 Addenda. Additionally, the Section XI Committee is currently developing a Code Case which will provide for evaluation of leaking connections as an alternate requirement to IWA-5250.