PHILADELPHIA ELECTRIC COMPANY

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M. J. COONEY
MANAGER
NUCLEAR SUPPORT DEPARTMENT

May 1, 1987

Docket No. 50-352

Mr. W. R. Butler, Director
Project Directorate I-2
Division of Reactor Projects
ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SUBJECT: Application Fee for Limerick Generating Station Unit 1 Request to Remove Reactor Head Spray and Vent Piping and Detension Studs

Reference: Letter, J. W. Gallagher, PECo, to W. R. Butler, NRC, dated April 22, 1987

Dear Mr. Butler:

Please find herein Philadelphia Electric Company's check for $150.00, which was inadvertently not enclosed in the referenced letter, in full compliance with Section 170.12 of the Commission's Regulations. In the referenced letter, the Commission was requested to review our plans for removal of the Reactor Pressure Vessel (RPV) head spray and vent piping and detensioning the RPV head studs prior to connecting the Standby Gas Treatment System to the refueling area. We regret any inconvenience the delay in submitting the application fee may have caused.

Very truly yours,

Attachments

cc: W. T. Russell, Administrator, Region I, USNRC
E. M. Kelly, Senior Resident Site Inspector
See Attached Service List

A001 w/check $150 #4702407 1/1

COPY

CAM

PHILADELPHIA ELECTRIC COMPANY

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JOSEPH W. GALLAGHER
VICE PRESIDENT
NUCLEAR OPERATIONS

April 22, 1987
Docket No. 50-352

Mr. W. R. Butler
BWR Project Directorate #4
Division of Boiling Water Reactor Licensing
U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555

SUBJECT: Limerick Generating Station Unit 1
Removal of Reactor Head Spray and
Vent Piping and Vessel Stud Detensioning

REFERENCES: a) Letter, V. S. Boyer (PECo) to H. R. Denton (NRC), Dated September 21, 1984
b) Letter, J. W. Gallagher (PECo) to W. R. Butler (NRC), Dated March 19, 1987

Dear Mr. Butler:

Limerick Generating Station Unit 1 License Condition 2.C.14 states that until the Standby Gas Treatment System (SGTS) is connected to the refueling area, the Licensee shall not remove the RPV head prior to NRC staff review and approval. License Condition 2.C.14 references Section 6.2.3 of SSER-2 and SSER-3 which states that until the SGTS is connected to the refueling area, operations involving removal of the Primary Containment head as well as the RPV head after initial criticality are prohibited without specific prior NRC approval. This same condition is contained in reference a). Reference b) requested NRC approval to remove the drywell head prior to connection of the SGTS to the refueling floor. With approval of that request, our plans for the upcoming refueling outage call for removal of the RPV head spray and vent piping and detensioning the RPV head studs prior to connecting the SGTS to the refueling area.

A Safety Evaluation has been performed which concludes that the SGTS need not be connected to the refueling area while removing the RPV head spray and vent piping and detensioning the RPV head studs for the following reasons:

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Upp

- Removal of the RPV head spray and vent piping and detensioning the the RPV head studs can not result in fuel

damage requiring the use of the SGTS to control the release of radiation.

- SGTS is not required by the Technical Specification Limiting Conditions for Operation to be operable during removal of the RPV head spray and vent piping and detensioning the RPV head studs.

- There are no Technical Specification Limiting Conditions for Operation requiring that the refueling area secondary containment integrity be verified prior to performing the aforementioned operations. Refueling area secondary containment integrity will be verified prior to handling irradiated fuel, performing core alterations, or operations with the potential to drain the vessel as required by Technical Specification Section 3/4.6.5.1.2

- Acceptable limits on primary coolant radioactivity prior to initiating the removal of the RPV head spray and vent piping and detensioning the studs can be determined based on the LGS Technical Specification Instantaneous Limits (3.11.2). Current primary coolant activity is approximately 1×10^{-4} uCi/gm (I-131 dose equivalent.) Conservative calculations indicate that a coolant activity limit of 3.65 Ci or 0.02 uCi/gm (I-131 dose equivalent), more than two orders of magnitude above the current coolant activity, will ensure that offsite doses will remain below Technical Specification limits. The calculation on which this limit is based is attached (Attachment I). Prior to removal of the piping and detensioning the studs, coolant activity will be verified to be below the calculated limit.

- Immediately upon breaching the flanged connections between the 6" RPV head spray and 4" vent piping and the RPV head, health physics surveys are taken to ensure excessive radioactivity will not be released when the piping is completely removed. As soon as the piping is removed, blank flanges or HEPA filters are installed on the two RPV head flanges to inhibit the direct communication between the reactor coolant and the refueling area. The above steps are not unique to the first refueling outage. They are part of the standard procedures to be followed during any refueling outage, as shown in the refueling outage flow diagram, FSAR Figure 9.1-13.

The removal of the RPV head spray and vent piping and detensioning the RPV head studs will be performed in accordance with the appropriate approved plant procedures to assure that the assumptions, actions, and conclusions presented in the above discussions remain valid.

Based on the above considerations, it is not necessary to have the SGTS connected to the refueling area prior to the removal of the RPV head spray and vent piping and detensioning the RPV head studs.

In order to conform with the intent of license condition 2.C.14, Philadelphia Electric Company requests NRC approval to remove the RPV head spray and vent piping and detension the RPV head studs prior to the connection of SGTS to the refueling floor.

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

In accordance with Section 170.12 of the Commission's regulations, enclosed is Philadelphia Electric Company's check in the amount of $150.00 to cover the filing fee.

Very truly yours,

JW Gallagher

CNW/cb/04028709

Attachment

Copy to: Addressee
W. T. Russell, Regional Administrator, USNRC, Region I
E. Kelly, Senior Resident Site Inspector
See Attached Service List

ATTACHMENT I

Technical Specification 3.11.2 Instantaneous Limits

Definitions:

X/Q = dispersion factor
BR = breathing rate
D.F. = dose conversion factor
D = maximum permitted dose

Dose = (1500 mr/yr) (1 yr./8760 hr.) (8 hr.)

= 1.37 mr

D = (ci) (x/Q) (BR) (D.F.), assuming an 8 hr. release

Where x/Q = 7.3×10^{-5} s/m^3 per EROL Table 7.1-6 (8 hr. av.)

BR = 1.17×10^{-4} m^3/s per R.G. 1.109

D.F. = 4.39×10^{9} mrem/Ci per R.G. 1.109

D = 1.37 mr

Ci = (Coolant Activity) (Release Fraction)

= CA (RF)

Where: RF = 0.01 per R.G. 1.25

$$CA = \frac{D}{(RF)\ (x/Q)\ (BR)\ (DF)} = \frac{1.37}{(0.01)\ (1.17 \times 10^{-4})\ (7.3 \times 10^{-5})\ (4.39 \times 10^{9})}$$

= 3.65 Ci

= 2×10^{-2} uCi/gm

WJB/pd03208709