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U. S. Nuclear Regulatory Commission
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**SUSQUEHANNA STEAM ELECTRIC STATION
RESPONSE TO GENERIC LETTER 2003-01
CONTROL ROOM HABITABILITY
PLA-5659**

**Docket Nos. 50-387
and 50-388**

Reference: 1) Generic Letter 2003-01 "Control Room Habitability," dated June 12, 2003.

The purpose of this letter is to provide PPL Susquehanna, LLC's (PPL's) 60 day response to Generic Letter 2003-01 (Reference 1). Attachment 1 to this letter contains the schedule for providing the information requested.

PPL recognizes and has been following the development of the issues delineated in the Generic Letter and understands the importance of ensuring habitability of the Susquehanna Steam Electric Station (SSES) Control Room under normal and off-normal plant conditions.

The SSES Control Room Habitability design and construction were based on an understanding of the regulatory requirements in existence at the time Susquehanna was licensed. Subsequent operation and surveillance testing provided confidence that these requirements were being met. The Generic Letter identifies NRC findings that suggest that the control room design and licensing bases and applicable regulatory requirements may not be met, and that existing Technical Specification surveillance requirements may not be adequate.

We will evaluate the concerns identified in the Generic Letter using the guidance contained in NEI 99-03, "Control Room Habitability Assessment Guidance," and Regulatory Guide 1.196, "Control Room Habitability at Light-Water Nuclear Power Reactors." We believe that the schedule defined in Attachment 1 is acceptable based on the low probability of a design basis accident and the conservatism inherent in design basis dose calculations, including conservatism in the design basis source term. Based on the results, PPL will take the actions to demonstrate and maintain the design and licensing bases for the Control Room Habitability Systems (CRHSs).

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Any questions regarding this information should be directed to Mr. Michael H. Crowthers at (610) 774-7766.

Sincerely,

A handwritten signature in black ink, appearing to read "Bryce L. Shriver". The signature is fluid and cursive, with the first name "Bryce" and last name "Shriver" clearly distinguishable.

B. L. Shriver

Attachment 1 - GL 2003-01 Requested Information

copy: NRC Region I
Mr. R. V. Guzman, NRC Project Manager
Mr. S. Hansell, NRC Sr. Resident Inspector
Mr. R. Janati, DEP/BRP
Mr. H. J. Miller, Regional Administrator, Region 1

Attachment 1 to PLA-5659

GL 2003-01 Requested Information

Generic Letter 2003-01 Requested Information

NRC Request 1:

Provide confirmation that your facility's control room meets the applicable habitability regulatory requirements (e.g., GDC 1, 3, 4, 5 and 19) and that the CRHSs are designed, constructed, configured, operated, and maintained in accordance with the facility's design and licensing bases.

PPL Response:

During the design phase of Susquehanna Steam Electric Station (SSES) Units 1 and 2, analyses were performed to demonstrate that the Control Room Habitability Systems (CRHSs) provide a habitable environment during design basis radiological and hazardous chemical release events in accordance with the applicable GDCs as described in FSAR Section 3.1.

FSAR Section 6.4 addresses the SSES CRHSs design, which depend on a positive pressure Control Room Envelope (CRE). FSAR Section 9.4.1 discusses the Control Room and control structure HVAC system design features. FSAR Section 15B.2 describes the SSES Control Room Dose Model. Compliance with the Three Mile Island (TMI) Action Item III.D.3.4, "Control Room Habitability Requirements" is described in FSAR Section 18.1.70.

SSES Unit 1 and Unit 2 Technical Specifications contain a Surveillance Requirement SR 3.7.3.4 that verifies a positive pressure can be maintained. This test is required to be performed every 24 months on a staggered test basis.

These analyses and tests formed the basis for compliance with the associated regulatory requirements as they have been interpreted to date. However, in light of concerns identified by the NRC, the Generic Letter requests confirmation that the SSES Control Room meets the applicable regulatory requirements on habitability (e.g., GDC 1, 3, 4, 5 and 19), and that the CRHSs are designed, constructed, configured, operated, and maintained in accordance with the facility's design and licensing bases. PPL concurs that this action is prudent. Due to the scope of the work needed to provide the requested confirmation, PPL will take the following actions, using the guidance of NEI 99-03 and Regulatory Guide 1.196:

1. A design review, (which will include the construction and configuration of the CRHSs), will be performed to confirm that the applicable design and regulatory requirements (GDCs, Regulatory Guides, etc.) are met for postulated radiological and hazardous chemical release events. This review, which is described in greater detail below, will be completed and the results, including any further actions, transmitted to the NRC by February 2, 2004. This time period will allow scoping analyses to be completed that will identify any potential changes in methodology that are necessary. Also, this time period will allow adequate review time by internal and external independent experts.
2. Based on the above design review, PPL will evaluate the adequacy of the SSES administrative control programs that ensure that the operation and maintenance of the Control Room Habitability Systems meet the SSES Design and Licensing Basis, and make changes as necessary. This process will be ongoing as our response to these issues evolves.
3. The SSES Corrective Action Program will be used to disposition any deficiencies identified by these analyses and evaluations.

NRC Request 1a:

That the most limiting unfiltered leakage into your CRE (and the filtered leakage if applicable) is no more than the value assumed in your design basis radiological analyses for control room habitability. Describe how and when you performed the analyses, tests, and measurements for this confirmation.

PPL Response:

The filtered pressurization flow rate that is assumed in the radiological analysis is confirmed via SSES Technical Specification SR 3.7.3.4 every 24 months on a staggered test basis.

FSAR Section 15B.2 describes the SSES Control Room Dose Model. The model assumes an unfiltered leakage rate of 10 scfm. Given the data described in the Generic Letter for facilities that have performed unfiltered leakage testing in accordance with ASTM E741, PPL may elect to increase the limiting unfiltered leakage flow rate when performing the confirmatory analyses discussed in the response to Request 1. PPL has not performed the tracer gas testing described in American Society for Testing and Materials (ASTM) consensus standard E741, "Standard Test Method for Determining Air Change in a Single Zone by Means of a Tracer Gas Dilution." Upon completion of these analyses, the unfiltered leakage rate will be established, and the necessity for unfiltered leakage rate testing will be determined.

The basis for this determination and the schedule for any further necessary actions will be provided to the NRC by February 2, 2004.

NRC Request 1b:

That the most limiting unfiltered inleakage into your CRE is incorporated into your hazardous chemical assessments. This inleakage may differ from the value assumed in your design basis radiological analyses. Also, confirm that the reactor control capability is maintained from either the control room or the alternate shutdown panel in the event of smoke.

PPL Response:

The hazardous chemical assessments that were performed as part of the original design analysis were more qualitative than quantitative in nature. The control structure HVAC systems were originally designed to satisfy the requirements of Regulatory Guides 1.78 and 1.95 as described in the SSES FSAR. As a result, the original assessments did not assume an unfiltered inleakage flow rate for any hazardous chemical postulated events. PPL will make a determination of the necessity for unfiltered leakage testing once the design review described above for hazardous chemical release events is completed.

As described in the SSES FSAR, the control room habitability systems have been designed to preclude the effects of smoke from inhibiting the habitability of the control room. PPL will perform a qualitative smoke assessment to confirm that the reactor control capability is maintained from either the control room or the alternate shutdown panel in the event of smoke.

The results of both of these actions will be provided to the NRC by February 2, 2004.

NRC Request 1c:

That your technical specifications verify the integrity of the CRE, and the assumed inleakage rates of potentially contaminated air. If you currently have a ΔP surveillance requirement to demonstrate CRE integrity, provide the basis for your conclusion that it remains adequate to demonstrate CRE integrity in light of the ASTM E741 testing results. If you conclude that your ΔP surveillance requirement is no longer adequate, provide a schedule for: 1) revising the surveillance requirement in your technical specification to reference an acceptable surveillance methodology (e.g., ASTM E741), and 2) making any necessary modifications to your CRE so that compliance with your new surveillance requirement can be demonstrated.

If your facility does not currently have a technical specification surveillance requirement for your CRE integrity, explain how and at what frequency you confirm your CRE integrity and why this is adequate to demonstrate CRE integrity.

PPL Response:

Currently, PPL confirms the integrity of the CRE by a ΔP surveillance requirement (SSES Technical Specification SR 3.7.3.4). The SSES CRE was designed to eliminate unfiltered inleakage into the CRE boundary. To accomplish this design objective, most of the HVAC ductwork was housed within the boundary. To accommodate all the HVAC ductwork, the CRE for SSES encompasses multiple floors of the Control Structure Building. This configuration is not typical within the nuclear industry and thus it is not clear that the currently performed SSES ΔP surveillance is inadequate because industry data may not be relevant to the SSES design. As stated in the response to Request 1a, PPL will make a determination of the necessity for unfiltered leakage testing once the appropriate analyses identified above are completed.

Based on the results of that review and ongoing industry discussions, PPL will establish the need for a change to the Technical Specifications. This determination and necessary schedule information will be provided to the NRC by February 2, 2004.

NRC Request 2:

If you currently use compensatory measures to demonstrate control room habitability, describe the compensatory measures at your facility and the corrective actions needed to retire these compensatory measures.

PPL Response:

A review of the SSES FSAR indicates that there are currently no compensatory measures that have been taken that were required to demonstrate compliance to control room habitability requirements. This will be validated during the design review described above, and will be provided to the NRC by February 2, 2004.

NRC Request 3:

If you believe that your facility is not required to meet either the GDC, the draft GDC, or the "Principle Design Criteria" regarding control room habitability, in addition to responding to 1 and 2 above, provide documentation (e.g., Preliminary Safety Analysis Report, Final Safety Analysis Report sections, or correspondence) of the basis for this conclusion and identify your actual requirements.

PPL Response:

This question is not applicable to SSES, because the station was licensed to the applicable General Design Criteria.

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