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U.S. Nuclear Regulatory Commission
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SUSQUEHANNA STEAM ELECTRIC STATION
RELIEF REQUESTS 1RR05 AND 2RR05 FOR
THIRD TEN-YEAR INTERVAL INSERVICE
TESTING PROGRAM PLANS FOR
SUSQUEHANNA SES UNITS 1&2 **Docket Nos. 50-387**
PLA-5805 **and 50-388**

Attached please find, pursuant to 10 CFR 50.55a, "Codes and Standards," paragraph (a)(3), relief requested from the requirements of ASME OM Code ISTC-3522(c) for HPCI and RCIC systems' check valves. The basis of the relief request is that the proposed alternative would provide an equivalent level of quality and safety. This proposed alternative is requested for the duration of the Third Ten-Year Interval Susquehanna Steam Electric Station Unit 1 IST Program (June 1, 2004 through May 31, 2014).

We request that Relief Requests 1RR05 and 2RR05 to the Third Ten-Year Interval IST Program Plans for Susquehanna SES Units 1 and 2 be approved by January 1, 2005.

Should you have any questions, please contact C. T. Coddington at (610) 774-4019.

Sincerely,

B. T. McKinney

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Attachments:

Attachment 1 - Relief Request 1RR05 to the Susquehanna Steam Electric Station Unit 1 Third Ten-Year Interval Inservice Testing Program Plan

Attachment 2 - Relief Request 2RR05 to the Susquehanna Steam Electric Station Unit 2 Proposed Third Ten-Year Interval Inservice Testing Program Plan

Copy: Regional Administrator – Region I
Mr. A. J. Blamey, NRC Sr. Resident Inspector
Mr. R. V. Guzman, NRC Project Manager
Mr. R. Janati, DEP/BRP

Attachment No. 1 to PLA-5805

Relief Request 1RR05 to

Susquehanna SES Unit 1

Third Ten-Year Interval

Inservice Testing Program Plan

RELIEF REQUEST 1RR05

Relief in accordance with 10 CFR 50.55a (a)(3)(i)

Alternative Provides Acceptable Level of Quality and Safety

1. **ASME Code Component(s) Affected**

Valve Number	System	Cat.	Safety Class
149F028	Reactor Core Isolation Cooling	A/C	2
149F040	Reactor Core Isolation Cooling	A/C	2
155F049	High Pressure Coolant injection	A/C	2

Function

Check valve 149F028 is the Reactor Core Isolation Cooling (RCIC) Vacuum Pump discharge check valve to the suppression pool. It has a close safety function for containment isolation. Check Valve 149F040 is the Reactor Core Isolation Cooling (RCIC) Turbine Exhaust check valve to the suppression pool. It has an open safety function to provide a flow path from the RCIC turbine exhaust to the suppression pool and a close safety function for containment isolation. Check valve 155F049 is the High Pressure Coolant Injection (HPCI) Turbine Exhaust check valve to the suppression pool. It has an open safety function to provide a flow path from the HPCI turbine exhaust to the suppression pool and a close safety function for containment isolation.

2. **Applicable Code Requirement**

ASME OM Code 1998 Edition through OMb-2000 Addenda

ISTC-3522(c), "Category C Check Valves"

"If exercising is not practical during operation at power and cold shutdowns, it shall be performed during refueling outages."

3. **Basis for Relief**

Pursuant to 10 CFR 50.55a, "Codes and Standards," paragraph (a)(3), relief is requested from the requirements of ASME OM Code ISTC-3522(c). The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

The components listed above are check valves with no external means for exercising and no external position indication. The only practical means to verify closure is by Appendix J local leakage rate testing. This involves setup of test equipment and system configuration changes that are impractical on a quarterly or cold shutdown basis. The Appendix J testing can be performed at intervals other than refueling outages such as during system outage windows.

Prior to performing a system outage on-line, its effect on risk is evaluated in accordance with requirements of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear power Plants." This requirement states in part that: "Before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities."

SSES complies with the requirements of 10 CFR 50.65(a)(4) via application of a program governing maintenance scheduling. The program dictates the requirements for risk evaluations as well as the necessary levels of action required for risk management in each case. The program also controls operation of the on-line risk monitoring system, which is based on probabilistic risk assessment (PRA). With the use of risk evaluation for various aspects of plant operations, SSES has initiated efforts to perform additional maintenance, surveillance, and testing activities during normal operation. Planned activities are evaluated utilizing risk insights to determine the impact on safe operation of the plant and the ability to maintain associated safety margins. Individual system components, a system train, or a complete system may be planned to be out of service to allow maintenance, or other activities, during normal operation.

Appendix J testing may involve a system breach, if required to repair a failed valve. However, during the disassembly process to perform maintenance, the subject valve is isolated and the associated section of piping drained. Thus, the system breach does not increase the risk due to internal flooding or internal system loss-of-coolant accident. The risk associated with these activities would be bounded by the risk experienced due to the system outage. Therefore, closure testing of these valves by Appendix J during schedule system outages while on-line would have no additional impact on core damage frequency.

As more system outages are performed on-line, it is evident that selected refueling outage inservice testing activities, (e.g., closure testing by leak testing) could be performed during these system outage windows without sacrificing the level of quality or safety. Inservice testing performed on a refueling outage frequency is currently acceptable in accordance with ASME OM Code, 1998 Edition through 2000 Addenda. By specifying testing activities on a frequency commensurate with each refueling outage, ASME OM Code, 1998 Edition through 2000 Addenda, establishes an acceptable time period between testing. Historically, the refueling outage has provided a convenient and defined time period in which testing activities could be safely and efficiently performed. However, an acceptable testing frequency can be maintained separately without being tied directly to a refueling outage. Inservice testing performed on a frequency that maintains the acceptable time period between testing activities during the operating cycle is consistent with the intent of ASME OM Code, 1998 Edition through 2000 Addenda.

Over time, approximately the same number of tests will be performed using the proposed operating cycle frequency as would be performed using the current refueling outage frequency. Thus, inservice testing activities performed during the proposed operating cycle test frequency provide an equivalent level of quality and safety.

4. **Proposed Alternate Testing**

Pursuant to 10 CFR 50.55a(a)(3)(i), SSES proposes an alternative testing frequency for performing inservice testing of the valves identified above. The valves will be closure tested by Appendix J on a frequency of at least once per operating cycle in lieu of once each refueling outage as currently allowed by ASME OM Code, 1998 Edition through 2000 Addenda, ISTC-3522(c), "Category C Check Valves." The open safety function of check valve 149F040 will be demonstrated quarterly in conjunction with the RCIC flow verification (inservice pump test). The open safety function of check valve 155F049 will be demonstrated quarterly in conjunction with the HPCI flow verification (inservice pump test). As required by ISTC-5221(a)(3), the open function of check valve 149F028 will be demonstrated quarterly in conjunction with the RCIC flow verification (inservice pump test).

5. **Duration of Relief Request**

This proposed alternative is requested for the duration of the Third Ten-Year Interval Susquehanna Steam Electric Station Unit 1 IST Program (June 1, 2004 through May 31, 2014).

Attachment No. 2 to PLA-5805

Relief Request 2RR05 to

Susquehanna SES Unit 2

Third Ten-Year Interval

Inservice Testing Program Plan

RELIEF REQUEST 2RR05

Relief in accordance with 10 CFR 50.55a (a)(3)(i)

Alternative Provides Acceptable Level of Quality and Safety

1. **ASME Code Component(s) Affected**

Valve Number	System	Cat.	Safety Class
249F028	Reactor Core Isolation Cooling	A/C	2
249F040	Reactor Core Isolation Cooling	A/C	2
255F049	High Pressure Coolant injection	A/C	2

Function

Check valve 249F028 is the Reactor Core Isolation Cooling (RCIC) Vacuum Pump discharge check valve to the suppression pool. It has a close safety function for containment isolation. Check Valve 249F040 is the Reactor Core Isolation Cooling (RCIC) Turbine Exhaust check valve to the suppression pool. It has an open safety function to provide a flow path from the RCIC turbine exhaust to the suppression pool and a close safety function for containment isolation. Check valve 255F049 is the High Pressure Coolant Injection (HPCI) Turbine Exhaust check valve to the suppression pool. It has an open safety function to provide a flow path from the HPCI turbine exhaust to the suppression pool and a close safety function for containment isolation.

2. **Applicable Code Requirement**

ASME OM Code 1998 Edition through OMb-2000 Addenda

ISTC-3522(c), "Category C Check Valves"

"If exercising is not practical during operation at power and cold shutdowns, it shall be performed during refueling outages."

3. **Basis for Relief**

Pursuant to 10 CFR 50.55a, "Codes and Standards," paragraph (a)(3), relief is requested from the requirements of ASME OM Code ISTC-3522(c). The basis of the relief request is that the proposed alternative would provide an acceptable level of quality and safety.

The components listed above are check valves with no external means for exercising and no external position indication. The only practical means to verify closure is by Appendix J local leakage rate testing. This involves setup of test equipment and system configuration changes that are impractical on a quarterly or cold shutdown basis. The Appendix J testing can be performed at intervals other than refueling outages such as during system outage windows.

Prior to performing a system outage on-line, its effect on risk is evaluated in accordance with requirements of 10 CFR 50.65(a)(4), "Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants." This requirement states in part that: "Before performing maintenance activities (including but not limited to surveillance, post-maintenance testing, and corrective and preventive maintenance), the licensee shall assess and manage the increase in risk that may result from the proposed maintenance activities."

SSES complies with the requirements of 10 CFR 50.65(a)(4) via application of a program governing maintenance scheduling. The program dictates the requirements for risk evaluations as well as the necessary levels of action required for risk management in each case. The program also controls operation of the on-line risk monitoring system, which is based on probabilistic risk assessment (PRA). With the use of risk evaluation for various aspects of plant operations, SSES has initiated efforts to perform additional maintenance, surveillance, and testing activities during normal operation. Planned activities are evaluated utilizing risk insights to determine the impact on safe operation of the plant and the ability to maintain associated safety margins. Individual system components, a system train, or a complete system may be planned to be out of service to allow maintenance, or other activities, during normal operation.

Appendix J testing may involve a system breach, if required to repair a failed valve. However, during the disassembly process to perform maintenance, the subject valve is isolated and the associated section of piping drained. Thus, the system breach does not increase the risk due to internal flooding or internal system loss-of-coolant accident. The risk associated with these activities would be bounded by the risk experienced due to the system outage. Therefore, closure testing of these valves by Appendix J during schedule system outages while on-line would have no additional impact on core damage frequency.

As more system outages are performed on-line, it is evident that selected refueling outage inservice testing activities, (e.g., closure testing by leak testing) could be performed during these system outage windows without sacrificing the level of quality or safety. Inservice testing performed on a refueling outage frequency is currently acceptable in accordance with ASME OM Code, 1998 Edition through 2000 Addenda. By specifying testing activities on a frequency commensurate with each refueling outage, ASME OM Code, 1998 Edition through 2000 Addenda, establishes an acceptable time period between testing. Historically, the refueling outage has provided a convenient and defined time period in which testing activities could be safely and efficiently performed. However, an acceptable testing frequency can be maintained separately without being tied directly to a refueling outage. Inservice testing performed on a frequency that maintains the acceptable time period between testing activities during the operating cycle is consistent with the intent of ASME OM Code, 1998 Edition through 2000 Addenda.

Over time, approximately the same number of tests will be performed using the proposed operating cycle frequency as would be performed using the current refueling outage frequency. Thus, inservice testing activities performed during the proposed operating cycle test frequency provide an equivalent level of quality and safety.

4. **Proposed Alternate Testing**

Pursuant to 10 CFR 50.55a(a)(3)(i), SSES proposes an alternative testing frequency for performing inservice testing of the valves identified above. The valves will be closure tested by Appendix J on a frequency of at least once per operating cycle in lieu of once each refueling outage as currently allowed by ASME OM Code, 1998 Edition through 2000 Addenda, ISTC-3522(c), "Category C Check Valves." The open safety function of check valve 249F040 will be demonstrated quarterly in conjunction with the RCIC flow verification (inservice pump test). The open safety function of check valve 255F049 will be demonstrated quarterly in conjunction with the HPCI flow verification (inservice pump test). As required by ISTC-5221(a)(3), the open function of check valve 249F028 will be demonstrated quarterly in conjunction with the RCIC flow verification (inservice pump test).

5. **Duration of Relief Request**

This proposed alternative is requested for the duration of the Third Ten-Year Interval Susquehanna Steam Electric Station Unit 2 IST program (June 1, 2004 through May 31, 2014).