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February 22, 1994

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

Subject: River Bend Station - Unit 1
Docket No. 50-458
License No. NPF-47
Proposed Amendment to the Technical Specifications
PVLCS Air Compressor (LAR 94-04)
File Nos.: G9.5, G9.42

RBG-40144
RBEXEC-94-060

Gentlemen:

Entergy Operations, Inc. (EOI) hereby files an application to amend the River Bend Station (RBS) - Unit 1 Technical Specifications, Appendix A to Facility Operating License NPF-47, pursuant to 10CFR50.90. This application is filed to request a line item improvement consistent with Specifications 3.6.1.8 and 3.6.1.9 of NUREG-1434, "Standard Technical Specification General Electric Plants, BWR/6." EOI has determined this change is necessary to aid plant operations when returning the Leakage Control System to service after maintenance or modifications. This request will prevent unnecessary plant shutdowns for conditions that do not contribute a significant reduction in the overall protection of the public health and safety.

The circumstances surrounding this change do not currently meet the NRC's criteria for exigent or emergency review. However, due to difficulties in returning this system to service after maintenance, within the current action time limits, we respectfully request an expeditious review.

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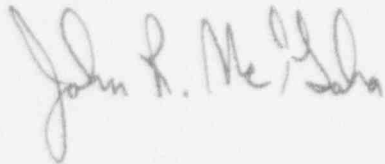
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Attachment 1 to this letter provides the justification for this proposed revision to the Technical Specification pages shown in Attachment 3. Attachment 2 to this letter provides the discussion of the "no significant hazards" consideration.

If you have further questions regarding the attached information, please contact me or my staff.

Sincerely,



attachments

cc: U. S. Nuclear Regulatory Commission
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NRC Resident Inspector
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BEFORE THE
UNITED STATES NUCLEAR REGULATORY COMMISSION

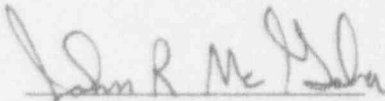
LICENSE NO. NPF-47

DOCKET NO. 50-458

IN THE MATTER OF
GULF STATES UTILITIES COMPANY
CAJUN ELECTRIC POWER COOPERATIVE AND
ENERGY OPERATIONS, INC.

AFFIRMATION

I, John R. McGaha, being duly sworn, state that I am the Vice President-Operations of Entergy Operations, Inc., at River Bend Station; that on behalf of Entergy Operations, Inc. I am authorized by Entergy Operations, Inc. to sign and file with the Nuclear Regulatory Commission, this letter requesting a license amendment for Technical Specification 3.6.1.5 and 3.6.1.10; that I signed this as Vice President-Operations at River Bend Station of Entergy Operations, Inc.; and that the statements made and the matters set forth therein are true and correct to the best of my knowledge, information, and belief.




John R. McGaha

STATE OF LOUISIANA
WEST FELICIANA PARISH

SUBSCRIBED AND SWORN TO before me, a Notary Public, in and for the Parish and State above named, this 22nd day of February, 1994.

(SEAL)



Notary Public

ATTACHMENT 1

PROPOSED RIVER BEND STATION DOCKET 50-458/LICENSE NO. NPF-47

LEAKAGE CONTROL SYSTEMS (94-04)

DOCUMENT INVOLVED: Technical Specifications

ITEM: ACTIONs 3.6.1.5
3.6.1.10

REASON FOR REQUEST:

In accordance with 10CFR50.90, Entergy Operations, Inc. (EOI) requests a revision to the River Bend Station (RBS) - Unit 1 Technical Specifications (TS), Appendix A to Facility Operating License NPF-47.

Technical Specification 3.6.1.10 specifies two Penetration Valve Leakage Control System (PVLCS) subsystems shall be OPERABLE when in OPERATIONAL CONDITIONS 1, 2 AND 3. The ACTION for one PVLCS subsystem inoperable is to restore the inoperable subsystem to OPERABLE status within seven days or be in HOT SHUTDOWN within the following 12 hours and COLD SHUTDOWN within the following 24 hours.

Technical Specification 3.6.1.10 specifies two Main Steam Leakage Control System (MS-PLCS) subsystems shall be OPERABLE when in OPERATIONAL CONDITIONS 1, 2 AND 3. The ACTION for one MS-PLCS subsystem inoperable is to restore the inoperable subsystem to OPERABLE status within 30 days or be in HOT SHUTDOWN within the following 12 hours and COLD SHUTDOWN within the following 24 hours.

River Bend Station has had a recent history of entering the ACTION statements for Technical Specifications 3.6.1.5 and 3.6.1.10 due to maintenance and modification on a PVLCS air compressor. The PVLCS air compressors provide support for the PVLCS and MS-PLCS systems. EOI is requesting this Technical Specification change due to the need to prevent unnecessary plant shutdowns for conditions that do not constitute significant reductions in the overall protection of the public health and safety.

Based on NUREG 1434, EOI is requesting a line item improvement that would extend the allowed outage time (AOT) for PVLCS from seven days to 30 days and would add the associated actions for two subsystems inoperable. The proposed ACTION times are consistent with the Completion Times of Specifications LCO 3.6.1.8 and 3.6.1.9 of NUREG-1434, "Standard Technical Specification General Electric Plants, BWR/6" for similar systems.

DESCRIPTION:

The proposed changes are to provide the necessary technical specification revisions to;

add an ACTION requirement to 3.6.1.5, Main Steam-Positive Leakage Control System (MS-PLCS), allowing a seven day out-of-service time for both subsystems inoperable, and

revise an ACTION requirement of 3.6.1.10, Penetration Valve Leakage Control System (PVLCS) allowing a 30 day out-of-service time for one subsystem inoperable, and

add an ACTION requirement to 3.6.1.10, PVLCS, allowing a seven day out-of-service time for both systems inoperable.

PVLCS System

As described in USAR Section 9.3.6 the PVLCS supplements the isolation function of primary containment isolation valves (PCIVs) in process lines that also penetrate the secondary containment. These penetrations are sealed by air from the PVLCS to prevent fission products leaking past the isolation valves and bypassing the secondary containment after a Design Basis Accident (DBA) loss of coolant accident (LOCA).

The PVLCS consists of two independent, manually initiated subsystems, either of which is capable of preventing fission product leakage from the containment post LOCA. Each subsystem is comprised of an air compressor, an accumulator, an injection valve, and three injection headers with separate isolation valves. This system has additional headers, which serve the Main Steam Positive Leakage Control System and safety/relief valve (S/RV) actuator air accumulators.

The analyses described in USAR Section 15.6.5 provides the evaluation of offsite dose consequences during accident conditions. During the first 25 minutes following an accident, the isolation valves on lines that penetrate primary containment and also penetrate secondary containment are assumed to leak fission products directly to the environment, without being processed by the Standby Gas

Treatment System. The system is manually initiated 20 minutes following an accident. The analyses take credit for manually initiating PVLCS after 25 minutes and do not assume any further secondary containment bypass leakage. Each process line has two PCIVs and an additional isolation valve outside of the outboard PCIV. Each valve is provided sealing air from its associated division of PVLCS.

The analysis conducted for the design basis of the PVLCS contains the following conservatisms:

The leakage from the valves is assumed to be from open systems inside containment and outside secondary containment. Many of the systems are closed both inside and outside.

RG 1.3 requires 100% noble gases and 25% halogens be assumed to be released with the majority of the offsite dose being contributed by iodine. At TMI-2 the iodine release was only 0.004%, a factor of 6250 reduction.

As a result, the actual offsite effects of the DBA event are expected to be greatly reduced from those evaluated.

MS-PLCS System

As described in USAR Section 6.7 the MS-PLCS supplements the isolation function of the MSIVs by providing a positive pressure air seal for the fission products that could leak through the closed MSIVs after a Design Basis Accident (DBA) loss of coolant accident (LOCA).

The MS-PLCS consists of two independent subsystems: an inboard subsystem, which is connected between the inboard and outboard MSIVs; and an outboard subsystem, which is connected to the double disk of main steamline shutoff valves and the valve stem packing glands of the outboard MSIVs at a positive air pressure with respect to reactor vessel pressure following system actuation. The MS-PLCS is supplied with compressed air by two separate and redundant compressed air supply subsystems that are integral components of the PVLCS. Each subsystem receives power from a separate division of the emergency power supply. The MS-PLCS is manually initiated approximately 20 minutes following a DBA LOCA, and is designed to control and minimize leakage through the MSIVs for up to 30 days.

The MS-PLCS mitigates the consequences of a DBA LOCA by preventing the release of untreated fission products from the closed MSIVs for this type of an event. The analyses in USAR Section 15.6.5 provide the evaluation of offsite dose consequences.

Automatic Depressurization System Support

In addition to the sealing air pressure the second function of the compressors is to provide a long term safety-related backup air supply to the Safety Relief Valve (SRV) and Automatic Depressurization System (ADS) accumulators. USAR, Section 5.2.2.4.1 states that the primary source of air for the SRV and ADS accumulators is from the non-nuclear safety main steam air compressors. Backup to this system is the safety-related PVLCS compressors. The ADS system accumulators have sufficient capacity to depressurize the reactor in the event of a design basis small break LOCA and loss of high pressure injection as described in Section 5.2.2.4 of the USAR. This analysis does not depend on the leakage control compressors to initially depressurize the reactor. The leakage control system is manually placed in service approximately 20 minutes following a LOCA event. The compressors themselves are automatically sequenced on the electrical distribution system at 10 minutes, after an interruption of electrical power, for long-term operability of the ADS valves.

In the RBS analysis for Station Blackout (SBO) an evaluation of the actual capacity of the S/RV's was conducted. This analysis determined for the 4 hour coping criteria RBS has determined that 31 S/RV actuations will be required during the first 4 hours. The majority of the actuations will be needed during the earlier portion of the event. The seven ADS valves have a total of 28 to 35 actuations available to control RPV pressure. When the nine remaining non-ADS valves are considered a minimum of 37 cycles are available. In addition, operator guidance for addressing the SBO event, is available to control RPV pressure by continuous S/RV opening, conserving accumulator supply, and to provide bottled air if necessary. As a result the actual relieving capacity is in excess of the expected need without the backup air compressor.

Risk

The MS-PLCS and PVLCS are judged to be of low safety significance since both function only to reduce leakage through an isolated containment following an accident. The PVLCS is also judged to be of low safety significance since the valves which it serves are required to meet specific leakage criteria and the system mitigates only a fraction of the complete containment leakage following an accident. Several studies have documented the minimal impact of increased unfiltered containment leakage, among these are NUREG-1273, Technical Findings and Regulatory Analysis for Generic Safety Issue II.E.4.3, "Containment Integrity Check," and NUREG/CR-3539, Impact of Containment Building Leakage on LWR Accident Risk. These documents indicate that leakage rates significantly in excess of the allowed leakage rates would not result in significant increase in risk to the public. Therefore, a 30 day allowance for one inoperable division and a seven day allowed outage time for both inoperable divisions are proposed. Both of these were

considered during the development of the BWR Standard Technical specifications, NUREG-1434, and were accepted for general application for these systems.

The RBS probabilistic safety assessment (PSA) for a loss of one PVLCS compressor indicated that as an isolation function:

1. From the Level 1 Individual Plant Examination (IPE), the probability of the deterministic DBA LOCA with concurrent loss of offsite power and worst case loss of one emergency diesel is less than $3E-12$ per year. Therefore, the loss of the PVLCS compressor is an extremely low probability event.
2. From the Level 2 IPE, the PVLCS compressor was not explicitly modeled. However, its performance can be bounded by the loss of isolation during a core damage event. For the Level 1 IPE core damage frequency of $1.55E-5$ per year, loss of isolation occurs with a frequency of $4.15E-7$ per year. This is a low safety significance and includes events for which no power would be available to the PVLCS compressor even if they were otherwise operable (e.g., station blackout). Based on this conservatism, the time safety significance of this event should be less than NUMARC's threshold of $1E-7$ per year for no corrective action needed.

The RBS probabilistic safety assessment (PSA) for a loss of one PVLCS compressor indicated that as a backup to the ADS function, the increase of core damage is insignificant. The increase in frequency of core damage is $3.76E-10$ per year. This represents a very small increase from the core damage frequency quantified in the RBS IPE. Moreover, the air supply to the SRVs is not credited for compliance to the Station Blackout (SBO) Rule. The four-hour SBO coping duration analysis for RBS demonstrates that SRV accumulators have adequate capacity to mitigate this event.

In addition to the above, evaluations performed at RBS have determined the probability of recovering offsite power within various time frames. This work indicated the probabilities are; 89% within one hour, greater than 98% within four hours and greater than 99% in eight hours. These times indicate for the unlikely event the PVLCS compressors are not available the normal compressors will be available within the time the accumulators are still supplying SRV actuations.

Both Leakage Control Systems

The existing Actions for inoperability of both divisions of the MS-PLCS and PVLCS, by default, requires entry into LCO 3.0.3. The system's safety function is to limit containment leakage from the main steam isolation valves. Processing this leakage prior to its release to the environment reduces the consequences of the event.

As presented in the BWR Standard Technical Specifications, NUREG-1434, systems that have an allowed out of service time of 30 days for one division inoperable, typically allow seven days for instances when both divisions are out of service. These out of service times are based on: 1) the safety significance of the system; 2) the probability of an event requiring the safety function of the system; and 3) the relative risks associated with the plant transient and potential challenge of safety systems experienced by requiring a plant shutdown.

REVISED TECHNICAL SPECIFICATIONS:

EOI proposes that Technical Specification 3.6.1.5 and 3.6.1.10 be revised as shown in Attachment 3.

SCHEDULE FOR ATTAINING COMPLIANCE:

River Bend Station is currently in compliance with this Technical Specification. However, to prevent unnecessary plant shutdown for a condition which does not constitute a significant reduction in the overall protection of the public health and safety EOI is requesting the Technical Specification line item improvement. A change to these LCOs has been recently proposed by RBS in a letter dated November 30, 1994 (Improved Technical Specification change request), which would amend the RBS Technical Specifications consistent with the guidance of NUREG-1434. This request proposes to adopt the completion time of Specifications 3.6.1.8 and 3.6.1.9 contained in NUREG-1434 as a specific line-item improvement prior to the issuance of the Improved Technical Specifications due to the burden of returning the system to service after maintenance.

EOI requests this proposed change become effective within seven days of receipt.

NOTIFICATION OF STATE PERSONNEL:

A copy of the amendment application and this submittal is being provided to the State of Louisiana, Department of Environmental Quality-Nuclear Energy Division.

ENVIRONMENTAL IMPACT APPRAISAL:

EOI has reviewed the proposed license amendment against the criteria of 10CFR51.22 for environmental considerations. The proposed changes to the technical specifications do not involve any significant hazards considerations, nor increase the types and amounts of effluents that may be released offsite, nor significantly increase individual or cumulative occupational radiation exposures. Based on the foregoing, EOI concludes that the proposed changes meet the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.

ATTACHMENT 2

NO SIGNIFICANT HAZARDS CONSIDERATIONS

In accordance with the requirements of 10CFR50.92, the following discussions are provided in support of the determination that no significant hazards are created or increased by the change proposed in this amendment request.

1. The proposed change would not involve a significant increase in the probability or consequences of an accident previously evaluated because:

This change request would allow 30 days of continued operation with one penetration valve leakage control system (PVLCS) subsystem inoperable. The PVLCS is required to mitigate the consequences of a design basis accident (DBA). The proposed change would increase the allowed outage time with one OPERABLE PVLCS.

Based on the RBS Level 1 and Level 2 Individual Plant Examination (IPE), the loss of one train of PVLCS, concurrent with a DBA and subsequent radionuclide release, is an extremely low probability event (e.g., less than $1E-7$ per year). This probability is less than the NRC Safety Goal of $1E-6$ per year for large releases following a core damage event. Because of the extremely low probability of the event, the increase in allowed outage time from seven days to 30 days does not represent a significant increase in the probability or consequences of the DBA which PVLCS is intended to mitigate.

The PVLCS is not an initiator of any previously analyzed accident. The configuration of one system inoperable is presently addressed by the specification and will not change an allowed operation. Because the operation is no different than previously allowed, the consequences of an event previously evaluated has not been increased. The probability of an event requiring the system has been evaluated and determined to be very low.

In addition, the proposed changes address two subsystems inoperable. This change would allow seven days of continued operation with both main steam positive leakage control (MS-PLCS) and PVLCS subsystems inoperable. The MS-PLCS and PVLCS are not initiators of any previously analyzed accident. Therefore, these changes do not significantly increase the frequency of such accidents. The proposed change would allow temporary operation with no OPERABLE PVLCS or MS-PLCS. Minor increases in containment leakage, such as the leakage through the MSIVs, have been found to have no significant impact on the risk to the public.

Consequently, this change does not significantly increase the consequences of any previously analyzed accident.

The increase to the probability of core damage as a result of the loss of long term ADS air supply backup has been evaluated and determined to be less than the NRC safety goal of $1E-6$ and the NUMARC goal of $1E-7$ for evaluation. Therefore there is not a significant increase in the probability of an accident previously evaluated.

2. The proposed change would not create the possibility of a new or different kind of accident from any accident previously evaluated because:

The proposed change to increase the allowed outage time from seven days to 30 days for one subsystem inoperable does not result in the possibility of a new or different kind of accident from any accident previously evaluated. This change does not result in any changes to the equipment design or capabilities. Since the PVLCS mitigates the consequences of an accident and failure of this system cannot create an accident. Therefore, this proposed change does not create the possibility of a new or different kind of accident from any previously analyzed accident.

The change to allow two systems out of service has been proposed for PVLCS and MS-PLCS of 7 days and is consistent with the allowable out-of-service time specified in LCO 3.6.1.8 and 3.6.1.9 of NUREG-1434, "Standard Technical Specification General Electric Plants, BWR/6" for these systems. This allowance is based on the low safety significance as discussed in NUREG-1273, Technical Findings and Regulatory Analysis for Generic Safety Issue II.E.4.3, "Containment Integrity Check," and NUREG/CR-3539, Impact of Containment Building Leakage on LWR Accident Risk.

Although the proposed change allows further operation of the plant with equipment not capable of performing its safety function, they do not result in any changes to the equipment design or capabilities. Loss of the containment function does not impact the reactor coolant pressure boundary or its support systems; therefore, does not create the possibility of a new or different kind of accident from any previously analyzed accident.

Since the change to the long term air supply for ADS has been evaluated and the increase in core damage is below the NRC safety goal of $1E-6$ and the NUMARC goal of $1E-7$ for evaluation, this proposal should not be considered as a new event.

3. The proposed change would not involve a reduction in the margin of safety because:

The proposed change to increase the allowed outage time from seven days to 30 days for one subsystem inoperable does not involve a significant reduction in the margin of safety. The PVLCS is not an initiator of any previously analyzed accident. As stated above, the proposed change increases the allowed outage time for a system that is used to mitigate the consequences of an accident. The system continues to perform its intended safety function and the change in allowed outage time has a very small impact on plant risk. The configuration of one system inoperable is presently addressed by the specification and therefore will not change the previous margin of safety of an allowed operation. Because the operation is no different than previously allowed, the results of an event previously evaluated have not been increased. Therefore, the proposed change does not result in a significant reduction in a margin of safety.

The proposed change would also allow seven days of continued operation with both MS-PLCS and PVLCS inoperable. Minor increases in containment leakage such as the leakage through the MSIVs, as identified in NUREG-1273 and NUREG/CR-3539, have been found to have no significant impact on the risk to the public. Therefore, the proposed change does not result in a significant reduction in a margin of safety.

The change to the long term ADS air supply has been determined not to add significant risk to the general public; therefore, the change does not involve a significant reduction in the margin of safety.