

ATTACHMENT

PROPOSED
GULF STATES UTILITIES COMPANY
RIVER BEND STATION
DOCKET 50-458/LICENSE NO. NPF-47

RADIATION MONITORING INSTRUMENTATION
(90-24)

LICENSING DOCUMENT INVOLVED:

TECHNICAL SPECIFICATIONS

ITEM:

Table 3.3.7.1-1, Item 4a

REASON FOR REQUEST:

In accordance with 10CFR50.90, Gulf States Utilities Company (GSU) is requesting a change to Technical Specification Table 3.3.7.1-1, "Radiation Monitoring Instrumentation," to reduce the alarm setpoint for the condenser air ejector pretreatment noble gas activity monitor from the current value of 2.48 E(4) mR/hr to 3410 mR/hr.

DISCUSSION:

During a review of Stone & Webster Engineering Corporation (SWEC) Calculation PR(c)-509-1, errors were detected by GSU personnel in the calculation of the alarm setpoint for the condenser air ejector pretreatment noble gas activity monitor (offgas pretreatment monitor). The calculational errors resulted in a non-conservative value for the offgas pretreatment high alarm setpoint, which was incorporated into Technical Specification (T/S) Table 3.3.7.1-1, Item 4a. This condition was reported to the staff as a condition outside the design basis of the plant in Licensee Event Reports (LER) 90-005, Revisions 0, 1 and 2, dated April 2, 1990, August 31, 1990, and December 27, 1990, respectively. This change request is being submitted as a portion of the corrective action for this LER.

SWEC reviewed the methodologies used in establishing the original T/S setpoint for this monitor. This review identified two methodology errors which resulted in the following non-conservative setpoint values:

1. A conceptual error in the methodology used regarding the distribution of activity flow rates at piping branch points. This led to calculation of setpoints that were independent of offgas system operating modes (i.e., startup operation versus normal operation).

2. The use of "stretch" reactor thermal power (105%) as the basis for the total steam-to-main condenser mass flow rate. The Technical Specifications for River Bend Station specify a total activity release rate limit which is based on 100% reactor thermal power. Thus, the basis for the original T/S setpoint is inconsistent with the Technical Specification limit.

SWEC Calculation PR(c)-509-1 was superseded by GSU Calculation No. G13.18.9.5-19-0, which recalculated the alarm setpoint using this revised methodology. The setpoint for full power operation was reduced from the original T/S setpoint 2.48 E(4) mR/hr to the current setpoint 546 mR/hr via Modification Request (MR) 90-0036.

Subsequent operation, particularly during the monitoring of leaking fuel assemblies, demonstrated that the new alarm setpoint was conservative. A detailed review of the assumptions in Calculation G13.18.9.5-19-0 indicated that the setpoint had been calculated for full power operation to maximize steam and non-condensable flow to the condenser. In addition, offgas flow had been assumed to be equal to system start-up flow to maximize radionuclide concentrations at the pretreatment monitor. However, these assumptions were incompatible.

For full power operations, reactor main steam flow is 12,474,347 lbs/hr and offgas flow is less than 50 scfm. The calculation which resulted in a conservative setpoint of 546 mRem/hr assumed that offgas flow could be as high as the maximum system startup flow of 250 scfm. When the appropriate system flow rate of 50 scfm was used, the high alarm setpoint was calculated to be 3410 mRem/hr.

To ensure that this setpoint was correct, the operation of the main condenser offgas and air removal systems was reviewed. During plant startup, approximately 95 percent of the non-condensable gases are removed from the main condenser by the air removal system compressors. These are filtered and monitored prior to release from the main plant exhaust. During this time, the offgas system is in startup with its charcoal adsorber beds bypassed to prevent wetting of the charcoal. The offgas system is not in operation until the air removal compressors are shutdown and the charcoal adsorber beds are placed in the "treat" mode. This is done with offgas system flow less than 50 scfm. Therefore, the offgas flow used to calculate an alarm setpoint of 3410 mRem/hr is valid.

Based on this recalculation, the offgas pretreatment radiation monitor setpoints are being revised via a new MR. A comparison between the original T/S, current, and final T/S setpoints is provided below. All setpoint figures are in units of mRem/hr.

<u>Setpoint Function</u>	<u>Original T/S Setpoint</u>	<u>Current Setpoint</u>	<u>Final T/S Setpoint</u>
Control Room Alarm and TS 3.3.7.1 LCO	2.48 E(4)	5.46 E(2)	3.41 E(3)
Emergency Plan NOUE Emergency Action Level 3	4.08 E(4)	9.43 E(2)	5.88 E(3)
Emergency Plan Alert Emergency Action Level 1	4.08 E(5)	9.43 E(3)	5.88 E(4)

In addition to affecting the Technical Specifications, the above calculation methodology errors also affect the Updated Safety Analysis Report (USAR) Section 13.3, "Emergency Plan", Table 13.3-1. As a result of correcting the errors in the calculation, two Emergency Action Level setpoints will also be reduced.

SIGNIFICANT HAZARDS CONSIDERATION:

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 by this submittal.

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

The existing Technical Specification alarm setpoint is non-conservative. The proposed change will decrease the alarm setpoint, providing operations personnel with earlier detection of high radioactivity levels in the offgas system upstream of the holdup pipe.

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

The proposed change will only reduce an alarm setpoint to a more conservative value. This change does not involve the potential for a new accident type, since plant design and alarm functions are unchanged.

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

Margins of safety are enhanced since this change would reduce the offgas pretreatment monitor alarm setpoint to a more conservative value.

Based on the above, GSU has determined that the proposed change does not (1) involve significant increase in the probability or consequences of an accident previously evaluated, (2) create the probability of a new or different kind of accident from any accident previously evaluated, or (3) involve a significant reduction in a margin of safety and therefore, does not involve a significant hazard consideration.

REVISED TECHNICAL SPECIFICATION:

The requested revision is provided in the Enclosure.

SCHEDULE FOR ATTAINING COMPLIANCE:

GSU is currently in full compliance with the applicable Technical Specification requirements. GSU requests this change be effective upon receipt.

NOTIFICATION OF STATE PERSONNEL:

A copy of this amendment request has been provided to the State of Louisiana, Department of Environmental Quality - Radiation Protection Division.

ENVIRONMENTAL IMPACT APPRAISAL:

GSU has reviewed the proposed license amendment against the criteria of 10CFR51.22 for environmental considerations. The proposed changes do not involve a significant hazards consideration, 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, GSU concludes that the proposed change meets the criteria given in 10CFR51.22(c)(9) for a categorical exclusion from the requirement for an Environmental Impact Statement.

TABLE 3.3.7.1-1

RADIATION MONITORING INSTRUMENTATION

<u>INSTRUMENTATION</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE CONDITIONS</u>	<u>ALARM/TRIP SETPOINT</u>	<u>ACTION</u>
1. Main Control Room Ventilation Radiation Monitor				
a. Local Intake	2	1,2,3,5 and *	$\leq 0.97 \times 10^{-5} \mu\text{Ci/cc}$	70
b. Remote Intake	1	1,2,3,5 and	$\leq 0.97 \times 10^{-5} \mu\text{Ci/cc}^{(a)}$	71
2. Area Monitor				
a. Fuel Building Spent Fuel Storage Pool	1	#	$\leq 15 \text{ mR/hr}^{(a)}$	71
3. Main Condenser Offgas Post-Treatment System Effluent Monitoring System				
a. Noble Gas Activity Monitor - (Providing Alarm and Automatic Termination of Release)	1	**	$\leq 5.08 \times 10^5 \text{ cpm}$	72
4. Condenser Air Ejector Pretreatment Radioactivity Monitor (Prior to Input to Holdup System)				
a. Noble Gas Activity Monitor	1	**	<div style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;"> 3410 $\leq 2.48 \times 10^4 \text{ mR/hr}^{(a)}$ </div>	73

Enclosure