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 VARGA, S. A. Operating Reactors Branch 1

SUBJECT: Application for amend to License DPR-23, changing  
 radiological effluent Tech Specs re operating requirements  
 for waste gas decay tanks & potential accident condition  
 response of ventilation sys serving tanks. Fee paid.

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Carolina Power & Light Company

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SERIAL: NLS-85-305

Director of Nuclear Reactor Regulation  
Attention: Mr. Steven A. Varga, Chief  
Operating Reactors Branch No. 1  
Division of Licensing  
United States Nuclear Regulatory Commission  
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261/LICENSE NO. DPR-23  
REQUEST FOR LICENSE AMENDMENT  
RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATION

Dear Mr. Varga:

The Radiological Effluent Technical Specifications for H. B. Robinson Unit 2 (HBR2) were initially submitted and approved as Amendment No. 85 to the Technical Specifications (TS). Full implementation of portions of this package, however, will become effective prior to start-up for Cycle 11. Carolina Power & Light Company (CP&L) has subsequently identified various changes that are required within that amendment. Although sections of the TS are not in effect at this time, this requested change is being submitted in accordance with the full requirements of the Code of Federal Regulations, Title 10, Parts 2.101, Parts 50.90 and 50.92.

For the most part, the changes requested herein are editorial in nature and serve to clarify ambiguities and provide consistency throughout the TS. There are three changes which are of substance addressing the operating requirements for the Waste Gas Decay Tanks and potential accident condition response of the ventilation system serving these tanks and the remainder of the lower level of the Fuel Handling Building. Descriptions of all of the changes, along with a discussion of their justification, are addressed individually in the subsequent "Description of Change" section.

#### SIGNIFICANT HAZARDS

Carolina Power & Light Company has reviewed these requests in accordance with the standards set forth in 10 CFR 50.92 and determined that the proposed license amendments involve no significant hazards consideration. This determination involved an evaluation of the proposed change with respect to the criteria established in 10 CFR 50.92. Specific justification is provided to demonstrate that operation of the facility in accordance with the proposed change would not:

- (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or
- (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or
- (3) involve a significant reduction in a margin of safety.

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In addition, the justification of the No Significant Hazards Determination is augmented, where applicable, by consideration of the guidance concerning application of this standard as provided by "Examples of Amendments Considered Not Likely to Involve Significant Hazards Consideration" as published in the Federal Register on April 6, 1983 (48 FR 14864). The basis upon which each requested amendment has been determined to present no significant hazard is presented along with the justification for each specific amendment provided below.

## DESCRIPTION OF CHANGES

- (1) **Editorial Changes** - These changes are minor in nature and do not have a significant impact on the substance of the TS. They provide consistency within the specification and clarify the meaning of some ambiguous action statements. Each of these editorial changes is discussed below:
  - (a) To provide consistency throughout the TS, specific references to TS Subsections 6.9.1.d.4 and 6.9.1.d.6 should be generalized to reference the overall section addressing the Semiannual Radioactive Effluent Release Report, TS 6.9.1.d. This change is required in a number of places within Table 3.5-6, Table 3.5-7, and TS Section 3.17.2.
  - (b) On page 3.5-24, item 1.b.b of Table 3.5-7 requires clarification of the requirements to analyze grab samples taken from the plant stack. The phrase "analyzed for radionoble gases once per 24 hours" has been changed to "within 24 hours." This change clarifies the intended meaning of the statement and standardizes the terminology to make it consistent with similar action statements within the TS.
  - (c) On page 3.5-25, item 1.c.b of Table 3.5-7 requires a minor change to improve the wording to read "as required by Table 4.10-2" instead of the original phrase "as provided by Table 4.10-2." Aside from being more accurate, the revised statement has a slightly stronger connotation. Any perceived altered meaning conveyed by the revised wording would be more restrictive than the existing text.

Carolina Power & Light Company has reviewed these editorial changes in accordance with the previously listed 10 CFR 50.92 Significant Hazards Criteria and determined that they do not constitute a significant hazards consideration. These editorial changes improve the wording of the text but do not provide any relief from the requirements of the TS or change the intended operation or administrative requirements of the plant. These changes have no effect on any plant safety parameters, accident mitigation capabilities, or procedures. Furthermore, they do not adversely affect any components or systems which contribute to the safety of the plant or the ability to properly handle potential off-site releases. Therefore, these changes comply with the 10 CFR 50.92 criteria in that they do not degrade any equipment, systems, or procedures which would impair the plant response to any of these safety concerns.

To further substantiate this No Significant Hazards conclusion, CP&L has reviewed the previously referenced guidance provided by the NRC "Examples of Amendment Considered Likely to Involve No Significant Hazards Consideration." These changes are comparable to the example provided in paragraph (i) of that guidance which

states that an amendment would be likely to be considered to involve no significant hazards consideration if it was "a purely administrative change to the TS: for example a change to achieve consistency throughout the TS, correction of an error, or a change in nomenclature."

(2) *Lower Level Fuel Handling Building (FHB) Ventilation Isolation*

In response to an NRC Inspector Follow-Up Item (IFI 81-07-34) CP&L evaluated the usefulness of the isolation feature on the RMS-20 Radionoble Gas Monitor. That feature was intended to shutdown the ventilation system in the lower level of the FHB when a high radiation signal was received from RMS-20 which sampled the effluent from that ventilation system. It was originally intended that such isolation of the ventilation system would terminate any release of gaseous or airborne radioactivity which may be generated within that portion of the building. However, since the building is not airtight, it is not possible to terminate a release by containment within the building. If the ventilation was shutdown, the activity would eventually be released through unmonitored, unfiltered leakage from the building.

As a result of the evaluation, CP&L concurred with the inspector recommendation that continued, monitored release via the ventilation system with the potentially mitigating benefits of the system filters, would be preferable to a slightly delayed but unmonitored, untreated release via fugitive emissions from the building if the ventilation system was isolated. As a result, the ventilation isolation feature was removed from the RMS-20 monitor by a plant modification during the steam generator repair outage. The change requested herein deletes the reference to this isolation feature as stated in item 5.a of Table 3.5-7 (page 3.5-28). This will update the TS to reflect the existing system capabilities.

Carolina Power & Light Company has reviewed this change request in accordance with the previously listed 10 CFR 50.92 criteria and determined that it does not constitute a significant hazards consideration. Justification for this determination will be demonstrated by addressing each of the criteria separately below:

*Criterion(1)*

*Operation of the plant in accordance with the change will not significantly increase the possibility or consequences of a previously evaluated accident.*

*Response*

Previously analyzed accidents affected by this change involve postulated failures of the Waste Gas System containment vessels which are located in the area serviced by the subject ventilation system. The methodology for evaluation of the off-site consequences of a tank or component failure does not take credit for any containment, dispersion, or hold-up time attributable to isolation of the Fuel Handling Building ventilation. As such, the condition of the ventilation system during the postulated releases is irrelevant to the calculation which demonstrates the acceptability of the off-site consequences of that release.

The actual off-site consequences, however, would be affected by the continuous operation of the ventilation system. The less favorable dispersion coefficient associated with the shorter duration release would increase the off-site dose to a value several times greater than would result in the previous condition with the ventilation system isolated. Regardless of the magnitude of this increase, the worst case scenario calculations demonstrate that the associated dose would be below the allowable limit of 0.5 R as established by Branch Technical Position ESTB 11-5, "Postulated Radioactive Releases Due to a Waste Gas System Leak or Failure." Therefore, the increased dose is not considered to be significant and is justified in order to provide release monitoring capability as specified by General Design Criteria 64 of 10 CFR 50, Appendix A.

Furthermore, the change does not affect the possibility of the postulated accident because it has no effect on any of the components or systems which might initially cause the accident.

*Criterion(2)*

*Operation of the plant in accordance with the change will not create the possibility of a new or different kind of accident from any accident previously evaluated.*

*Response*

The service area for the subject ventilation system is limited to the lower levels of the FHB and the building layout does not provide any major interconnection between the upper and lower levels which could provide significant crossflow between those areas. Therefore, the potential safety impact of this ventilation system is limited to the monitoring, filtering, and potential containment (or delay in the release) of the activity contained within the lower level of the Fuel Handling Building. Since the currently evaluated accidents already consider the consequences of a worst case release of activity contained within the lower level of the FHB assuming no credit for the existence of the building, there appears to be no conceivable new accident which has not been analyzed or shown to be bounded by existing analysis.

*Criterion(3)*

*Operation of the plant in accordance with the proposed change would not involve a significant reduction in a margin of safety.*

*Response*

Any conceivable identified margins of safety would be involved with the previously evaluated off-site release accidents. Since no credit is taken for containment or other mitigating capabilities provided by the building or its ventilation, any margins of safety inherent in or computed for these accidents would not be significantly affected by this change.

(3) *Waste Gas Decay Tank - Radioactive Inventory Limit*

Section 3.16.5 "Waste Gas Decay Tank (Radioactive Materials)" establishes the administrative limits for the allowable radioactive inventory in the Waste Gas Decay Tanks; internal CP&L review has identified an error in the allowed value. CP&L has subsequently recomputed that allowable limit in accordance with the conservative guidance provided by the Branch Technical Position ETSB 11-5 in NUREG-0800. The revised limits are provided by this proposed change.

Carolina Power & Light Company has reviewed this proposed change in accordance with the previously listed 10 CFR 50.92 criteria and determined that it does not constitute a significant hazards consideration. Justification for compliance with each of those criteria is presented below:

*Criterion(1)*

*Operation of the plant in accordance with the proposed change would not involve a significant increase in the probability or consequences of an accident previously evaluated.*

*Response*

The only previously evaluated accident dependent upon the inventory of Radioactive Materials in the Waste Gas Decay Tanks is a failure of the integrity of the tank or system which would release the full contents of the tank to the lower level of the Fuel Handling Building. The tank inventory limit itself is established to ensure that the off-site consequences of precisely such an event do not exceed allowable limits. The proposed reduction in allowable inventory has been evaluated in accordance with the conservative methodology presented in ETSB 11-5 in NUREG-0800 and demonstrated to comply with the established worst-case off-site dose criteria of 0.5 Rem.

*Criterion(2)*

*Operation of the plant in accordance with the proposed change would not create the possibility of a new or different kind of accident from any accident previously analyzed.*

*Response*

The only credible accidents dependent upon the radioactive inventory of the Waste Gas Decay Tank would involve releases of this inventory to the environment as previously discussed. No new accident scenarios have been identified.

*Criterion(3)*

*Operation of the plant in accordance with the proposed change would not involve a significant reduction in the margin of safety.*

*Response*

The safety impact of the curie content in the tank is limited to the previously discussed accident. As discussed, the reduction of the limit as provided herein can only serve to increase any conceivable margin of safety.

(4) *Waste Gas Decay Tank (Hydrogen and Oxygen)*

The discussion of controls to prevent the build-up of explosive mixtures of hydrogen and oxygen in the Waste Gas Decay Tank is presented in the Basis to Section 3.16.4 on page 3.16-8. The references to automatic control features to prevent exceeding the allowable concentrations is incorrect. HBR2 will rely upon the same operator actions to prevent accumulation of explosive mixtures as have been successful in the past. In addition, automatic diversion to recombiners is not an option. This proposed change to the basis corrects the discussion to reflect the actual plant status.

Carolina Power & Light Company has reviewed this proposed change in accordance with the previously listed 10 CFR 50.92 criteria and determined that it does not constitute a significant hazards consideration. Justification for claiming compliance with each of these criteria is presented below. Rather than individually addressing each criteria the following response is appropriate to address the safety concerns inherent in all of those criteria.

Response

This change is a correction of an error in the basis of this as yet unimplemented TS. The provisions described for automatic controls and the use of a hydrogen recombiner to maintain non-flammable concentrations in the tank were incorrectly stated. Therefore, the change requested herein is merely a correction of the description of original provisions for control of the flammability limits in the tanks and does not reflect a change to existing equipment or procedures used to control these parameters. Therefore, from a standpoint of the actual margins of safety or accident parameters, nothing has changed which could affect any aspects of the 10 CFR 50.92 criteria.

Since previous reviews may have given some safety significance to the feature inappropriately referenced in this section, the following discussion is provided to demonstrate that the existing conditions (as described by this change) are not a significant degradation of any safety factors which may have been assumed due to the inappropriate description provided by the original submittal.

The safety concerns pertaining to explosive mixtures in the Waste Gas Decay Tanks are predicated on ensuring that potentially explosive concentrations are not allowed to accumulate in these tanks. This is accomplished by established surveillances and limiting criteria which initiate operator actions to preclude reaching flammable concentrations in the tanks. These limits and corrective actions remain unchanged within the body of the TS (TS 3.16.4). Therefore, the safety factors pertaining to postulated explosive ruptures of the tank are not significantly affected by the change. Only the means by which the levels are to be maintained are affected by this correction. Since the limiting parameters and action statement remain unchanged, the safety considerations are not significantly affected by the operator initiated actions

as opposed to the previously stated automatic control. Similarly, existing capabilities are adequate to maintain concentrations below the TS limits as demonstrated by past performances.

Finally, the consequences of any conceivable accident with this component have already assumed worst-case conditions which are unaffected by the changes provided herein (see previous discussion of Waste Gas Decay Tank Failure). Therefore, CP&L contends that this change complies with the 10 CFR 50.92 criteria and thus does not constitute a significant hazards consideration.

#### ADMINISTRATIVE

The revised version of the TS pages affected by this request are included as an enclosure for your use.

In accordance with 10 CFR 170.12, a check in the amount of \$150 in payment of a license amendment application fee is attached.

If you have any questions concerning this request, please contact Mr. S. R. Zimmerman at (919) 836-6242.

Yours very truly,

  
A. B. Cutter - Vice President  
Nuclear Engineering & Licensing


ABC/MDM/ccc (1859MDM)

Attachment

cc: Dr. J. Nelson Grace (NRC-RII)  
Mr. G. Requa (NRC)  
Mr. H. Krug (NRC Resident Inspector - RNP)  
Mr. Heyward G. Shealy (SC)  
Attorney General (SC)

A. B. Cutter, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

My commission expires: 11/27/89

  
Notary (Seal)

