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SUBJECT: Application for amend to License DPR-23, revising Tech Specs
 re radiation monitors & upgrading stack flow monitor.

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Carolina Power & Light Company

SERIAL: NLS-90-165

AUG 21 1990

United States Nuclear Regulatory Commission
ATTENTION: Document Control Desk
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2
DOCKET NO. 50-261/LICENSE NO. DPR-23
REQUEST FOR LICENSE AMENDMENT - RADIATION MONITORS

Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light Company (CP&L) hereby requests a revision to the Technical Specifications (TS) for the H. B. Robinson Steam Electric Plant, Unit No. 2. The changes are required as a result of Plant Modification M1005 which removes, modifies, and installs radiation detection equipment related to the plant vent system. Specifically, the modification includes: (a) upgrade the plant vent radiation monitor (particulate, iodine, and noble gas detection), (b) upgrade the stack flow monitor and incorporate isokinetic sampling of the plant vent effluents, (c) provide new control room indication and recording equipment for the upgraded instrumentation, and (d) permanently divert the condenser air ejector discharge from the atmospheric vent to the plant vent and remove the automatic divert interlock from the condenser air ejector radiation monitor. Additionally a change is desired to the required actions of the "Containment Vessel Via Plant Vent Monitors" (RMS-11 and 12) to assure adequate effluent accountability for containment vessel (CV) releases when containment integrity is not required and the associated effluent monitoring instrumentation is out of service.

As a result of these changes, certain sections of the Technical Specifications are impacted. Table 3.5-7, Radioactive Gaseous Effluent Monitoring Instrumentation, requires revision to correctly identify the instruments and their combined functions that are implemented by the modification. The Minimum Channels Operable (MCO) for Item 1.b must be revised from 1 of 2 to 1 monitor required since a backup monitor is eliminated by this project. Item 3, Containment Vessel Via Plant Vent, is being modified to allow releases to continue with R11, R12, and R14C out of service when CV integrity is not required. Item 4, Condenser Vacuum Pump, should be eliminated since the discharge is permanently directed to the plant vent and, therefore, monitored by the plant vent instrumentation. Table 4.10-2, Radioactive Gaseous Waste Sampling and Analysis Program, requires revision to eliminate the statement that on high activity, condenser off-gas is discharged to the plant vent. Table 4.19-2, Radioactive Gaseous Effluent Instrumentation Surveillance Requirements, requires revision to correctly identify the instrumentation tag numbers which are changed by this project.

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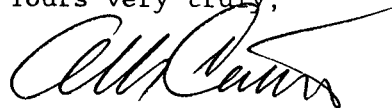
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Attachment 1 is a Supporting Analysis/Safety Analysis which discusses this change; Attachment 2 is a Significant Hazards Determination; Attachment 3 is the proposed changed pages. Changes are indicated by a single bar in the right margin.

The modification requiring these changes is scheduled for refueling outage 13; accordingly, approval of this request by November 30, 1990 is requested to support plant startup.

If you have any questions concerning this request, please contact Mr. L. I. Loflin at (919) 546-6242.

Yours very truly,



A. B. Cutter
Vice President
Director - Special Nuclear Projects

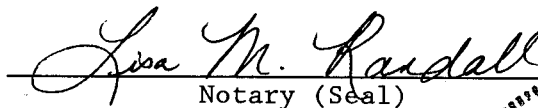
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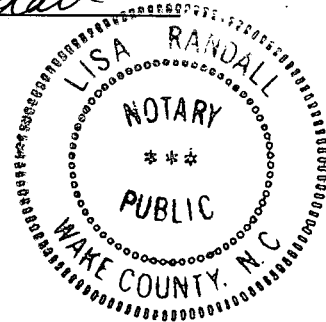
cc: Mr. S. D. Ebnetter
Mr. L. Garner (NRC-HBR)
Mr. R. Lo
Mr. Heyward G. Shealy (SC)
Attorney General (SC)

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: 6-7-93



Notary (Seal)



Attachment 1

SUPPORT ANALYSIS/SAFETY ANALYSIS

This project upgrades the instrumentation and equipment that monitor gaseous releases through the plant vent, and permanently diverts the condenser air ejector discharge to the plant vent.

This project does not constitute an unreviewed safety question. The plant vent radiation monitors and sampling system are upgraded. The new radiation monitors perform the same function as the existing radiation monitors. The existing monitors are being replaced to improve system reliability and operability. The stack sample extraction nozzles are replaced to provide a more representative particulate sample in conjunction with an isokinetic sample flow control system. The stack flow sensor is also replaced with a multiple probe system for improved reliability and accuracy.

This project does not increase the probability of the occurrence of an analyzed accident or equipment malfunction. This project upgrades the instrumentation to reduce the probability of any equipment malfunctions. Up-to-date equipment utilizing technology that has been proven in service increases reliability and decreases downtime for improved operability. This project upgrades instrumentation which is designed to follow the course of an accident; this equipment does not perform any control functions associated with any analyzed accident. Therefore, this modification does not increase the probability of the occurrence of any analyzed accidents or equipment malfunctions.

This project does not increase the consequences of an analyzed accident or equipment malfunction. The equipment replaced by this modification is not required to function to mitigate the consequences of an accident. Equipment failure cannot result in a radiological release which exceeds the limits of 10 CFR 100. Permanent routing of condenser evacuation air to the plant vent for greater dispersion and dilution decreases the off-site dose in the event of a steam generator tube rupture. Eliminating the need to divert condenser discharge from the atmospheric vent to the plant vent on high activity levels reduces the consequences of equipment malfunction since the condenser air radiation monitor no longer performs a control function. Replacing the two plant vent gas monitors with a single monitor does not increase the consequences of an equipment malfunction since the two monitors do not perform redundant functions and the capability to obtain grab samples of the plant vent is provided and required in the event of a failure of the plant vent monitor. The existing plant vent low range gas monitor (R-14), is energized by battery-backed instrument bus 7A. The existing plant vent particulate, iodine, and low range gas monitor (R-34) is energized by lighting panel LP-27 which can be energized by either diesel generator system via automatic transfer switches. The new plant vent radiation monitor (R-14) is also energized by lighting panel LP-27. Since the new plant vent radiation monitor can also be energized by either emergency diesel generator system, this plant modification does not impact the design criteria for the original plant vent monitors and therefore does not increase the consequences of an analyzed

accident (including loss of off-site power). In the event of an equipment malfunction, backup sampling capability is provided under all conditions, including a loss of off-site power, by either of the two local sample pump assemblies; one is located in the radiation monitoring building and the other is located on the stack service platform. Power to both of these local sampling points can be provided by either emergency diesel generator system via transfer switches. This plant modification meets the intent of UFSAR Section 3.1.1.2.3, Nuclear and Radiation Controls (GDC 11-GDC 18) which states that the plant vent is sampled for radioactivity concentration during all normal operations, anticipated transients, and accident conditions.

This project does not create any new types of accidents that have not been analyzed. This project upgrades plant vent monitoring equipment and permanently diverts condenser air ejector discharge to the plant vent. The new equipment performs the same function as the existing equipment. There are no new operating conditions or functions associated with this project.

This project does not decrease the margin of safety as defined in the bases for the Technical Specifications. Although the plant vent radiation monitor does not perform any safety-related functions to prevent or to mitigate the consequences of any analyzed or unanalyzed accidents, its operation is a Technical Specification item and is required to monitor and assure that plant operation is within the guidelines. The five detectors associated with the replacement plant vent radiation monitoring system have equal or greater equipment performance specifications as compared to the existing detectors. The detection of particulate radiation also improves because the new isokinetic sample nozzles have a greater particle collection efficiency. The replacement plant vent radiation monitors are installed in the same location as the existing off line detectors, so there is no significant change in the sample transport tubing.

This project requires changes to the plant Technical Specifications to correctly identify instrumentation which monitor plant gaseous effluents. The Technical Specifications will also be revised to eliminate the requirements of the condenser evacuation system radiation monitoring equipment. This equipment is no longer a Technical Specification requirement since effluents from this system are discharged to the plant vent and are monitored by the plant vent radiation detection equipment. In either case, the safety margins as defined in the bases are not reduced. At present, there are two low range noble gas detectors monitoring the plant vent. One detector provides isolation of the waste gas system on high activity level and indication and alarm functions. The second detector provides backup indication and alarm functions only. These two low range noble gas detectors are replaced with a single low range gas detector. This single detector provides the control, indication, and alarm functions of the existing two detectors. The new detector incorporates present-day technology with highly reliable components for improved performance and operability. Manual sampling of the specific release paths and of the plant vent are required by the operating procedures should the plant vent monitor fail; therefore, this project does not reduce any plant safety margins.

The Technical Specifications provide specific requirements concerning fire barriers which will be affected during the implementation of this project. When the implementing procedures require fire barriers to be breached, the procedures with specific reference to the appropriate Technical Specification items will require approval from the Shift Foreman and/or Fire Protection Personnel. In this manner, the margin of safety as defined in the bases for the Technical Specifications is not reduced.

During cold shutdown conditions, when containment vessel (CV) integrity is not required, certain access paths to the CV are open to the environment. These access paths are made available to expedite any ongoing maintenance activities and assure adequate environmental conditions for workers in the CV. It is a common practice at HBR2 to provide a continuous purge, if possible, during these times to enhance the environmental conditions and assure that any radioactive effluents released from systems due to maintenance are accounted for. Although radiation monitors RMS-11 and 12 are required operable only when CV integrity is required, they are used, if available, to assure effluent accountability even when CV integrity is not being maintained.

During review of the Mod 1005 TS change, it was found that during these cold shutdown conditions certain TS requirements could preclude releases/purges from CV. To resolve this potential concern, changes to allow CV releases with R11, R12, and R14C out of service and CV integrity not required (Table 3.5-7, Items 3.a.c and 3.b.c) are added.

In support of this change, it is important to note that the Robinson Plant CV release path includes additional radiation monitors (R14C), since CV releases pass through the plant vent. It is thus appropriate to allow CV releases even when compensatory action is in place for both sets of monitors, as long as CV integrity is not required, i.e., during conditions when release potential is at an absolute minimum. The release path, which passes through a HEPA and carbon filter, will still be monitored for effluent accountability, will prevent any significant particulate or iodine release and will assure adequate environmental conditions for workers.

Attachment 2

SIGNIFICANT HAZARDS DETERMINATION FORM

The basis for determining that a significant hazard does not exist from the proposed change is as follows.

- A. *The operation of the facility does not involve a significant increase in the probability of an accident previously evaluated. The instrumentation being implemented by M-1005 performs an effluent accountability function. Neither the existing monitors nor the new monitors participate in any accident sequence, therefore, the new monitors cannot increase the probability of any accident previously evaluated. This project does not increase the probability of a previously evaluated accident because it upgrades instrumentation designed to follow the course of an accident and thereby reduces the probability of equipment malfunction. This equipment does not perform any control function associated with any analyzed accident.*
- B. *The operation of the facility does not involve a significant increase in the consequences of an accident previously evaluated. The equipment replaced by this modification is not required to function to mitigate the consequences of an accident. Equipment failure cannot result in a radiological release which exceeds the limits of 10 CFR 100. Permanent routing of condenser evacuation air to the plant vent for greater dispersion and dilution decreases the off-site dose in the event of a steam generator tube rupture. Eliminating the need to divert condenser discharge from the atmospheric vent to the plant vent on high activity levels eliminates the consequences of equipment malfunction since the condenser air radiation monitor no longer performs a control function. Replacing the two plant vent gas monitors with a single monitor does not increase the consequences of an equipment malfunction since the two monitors do not perform redundant functions and the capability to obtain grab samples of the plant vent is provided and required in the event of a failure of the plant vent monitor.*
- C. *The operation of the facility does not create the possibility of a new kind of accident from any accident previously evaluated. This project upgrades plant vent monitoring equipment and permanently diverts condenser air ejector discharge to the plant vent. The new equipment performs the same function as the existing equipment. There are no new operating conditions or functions associated with this project.*
- D. *The operation of a facility does not create the possibility of a different kind of accident from any accident previously evaluated. This project upgrades plant vent monitoring equipment and permanently diverts condenser air ejector discharge to the plant vent. The new equipment performs the same function as the existing equipment. No different operating conditions or functions associated with this project are created.*

- E. *This project does not decrease the margin of safety.* Although the plant vent radiation monitor does not perform any safety related functions to prevent or to mitigate the consequences of any analyzed or unanalyzed accidents, its operation is a technical specification item and is required to monitor and assure that plant operation is within the Federal guidelines. The five detectors associated with the replacement plant vent radiation monitoring system have equal or greater equipment performance specifications as compared to the existing detectors. The detection of particulate radiation also improves because the new isokinetic sample nozzles have a greater particle collection efficiency. The replacement plant vent radiation monitors are installed in the same location as the existing off line detectors, so there is no significant change in the sample transport tubing.

This project requires changes to the plant Technical Specifications to correctly identify instrumentation which monitor plant gaseous effluents. The Technical Specifications will also be revised to eliminate the requirements of the condenser evacuation system radiation monitoring equipment. This equipment is no longer a Technical Specification requirement since effluents from this system are discharged to the plant vent and is monitored by the plant vent radiation detection equipment. In either case, the safety margins as defined in the bases are not reduced. At present, there are two low range noble gas detectors monitoring the plant vent. One detector provides isolation of the waste gas system on high activity level and indication and alarm functions. The second detector provides backup indication and alarm functions only. These two low range noble gas detectors are replaced with a single low range gas detector. This single detector provides the control, indication, and alarm functions of the existing two detectors. The new detector incorporates present-day technology with highly reliable components for improved performance and operability. Manual sampling of the specific release paths and of the plant vent are required by the operating procedures should the plant vent monitor fail; therefore, this project does not reduce any plant safety margins.

Attachment 3

Technical Specification Pages