



Carolina Power & Light Company

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Vice President
Nuclear Services Department

SERIAL: NLS-92-296
10 CFR 50.90
TSC 92TSB09

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

BRUNSWICK STEAM ELECTRIC PLANT, UNIT NOS. 1 AND 2
DOCKET NOS. 50-325 & 50-324/LICENSE NOS. DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENT
ECCS ACTUATION INSTRUMENTATION OPERABILITY

Gentlemen:

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, Carolina Power & Light Company hereby requests a one-time amendment to Appendix A of Operating Licenses DPR-71 and DPR-62 (the Technical Specifications) for the Brunswick Steam Electric Plant (BSEP), Units 1 and 2.

The proposed amendment will allow a one-time revision to the requirements of Technical Specification 3.3.3, EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION, when in OPERATIONAL CONDITION 4 (COLD SHUTDOWN). The proposed amendment will allow the minimum number of operable channels for one reactor steam dome pressure - low instrumentation trip system to be temporarily reduced from two (2) channels to one (1) channel. This will allow, on three separate occasions, one reactor steam dome pressure - low (injection permissive) channel to be placed in the inoperable status for up to seven days without invoking ACTION statement requirements. This one-time revision to the Technical Specifications is needed to support modifications to upgrade the seismic qualification of instrument racks H21-P009 (Unit 2 only) and H21-P010 (Unit 1 and Unit 2).

Enclosure 1 provides a detailed description of the proposed changes and the basis for the changes.

Enclosure 2 details, in accordance with 10 CFR 50.91(a), the basis for the Company's determination that the proposed changes do not involve a significant hazards consideration.

Enclosure 3 provides an environmental evaluation which demonstrates that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental assessment needs to be prepared in connection with issuance of the amendment.

Enclosure 4 provides page change instructions for incorporating the proposed revisions.

Enclosure 5 provides markups of the proposed Technical Specification pages for Unit 1.

Enclosure 6 provides markups of the proposed Technical Specification pages for Unit 2.

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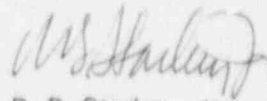
Carolina Power & Light Company is providing, in accordance with 10 CFR 50.91(b), Mr. Dayne H. Brown of the State of North Carolina with a copy of the proposed license amendment.

The Plant Nuclear Safety Committee has reviewed and recommended approval of this one-time license amendment request.

To support implementation of the seismic qualification upgrades discussed herein, CP&L requests prompt NRC review and approval of these proposed license amendments. Based on the Company's current work schedule, issuance of these proposed amendments is requested no later than December 31, 1992. In order to allow time for procedure revision and orderly incorporation into copies of the Technical Specifications, CP&L requests that the proposed amendments, once approved by the NRC, be issued with an effective date to be no later than 30 days from the issuance of the amendments.

Please refer any questions regarding this submittal to Mr. D. B. Waters at (919) 546-2710.

Yours very truly,



R. B. Starkey, Jr.

WRM/wrm (nls92296.wpf)

Enclosures:

1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Environmental Considerations
4. Page Change Instructions
5. Technical Specification Pages - Unit 1 (Markups)
6. Technical Specification Pages - Unit 2 (Markups)

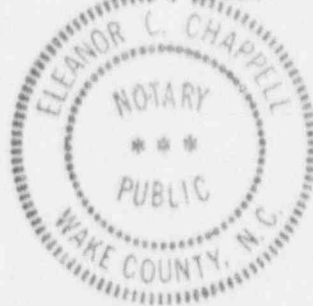
R. B. Starkey, Jr., having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

My commission expires: 2/6/94

cc: Mr. Dayne H. Brown
Mr. S. D. Ebner
Mr. R. H. Lo
Mr. R. L. Prevatte

Eleanor C. Chappell

Notary Seal



ENCLOSURE 1

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2 NRC DOCKET NOS. 50-325 & 50-324 OPERATING LICENSE NOS. DPR-71 & DPR-62 REQUEST FOR LICENSE AMENDMENT ECCS ACTUATION INSTRUMENTATION OPERABILITY

BASIS FOR CHANGE REQUEST

Background:

The units of the Brunswick Steam Electric Plant (BSEP) are both currently in mid-cycle outages. The outages were initiated when concerns arose that seismic design requirements in the diesel generator building were not satisfied. Work that must be completed prior to resumption of the current operating cycles has been identified and modifications are being made to upgrade the seismic qualification of several structures and components. For both units, the scope of work includes modifying various instrument racks located in the reactor building.

The Company currently plans to upgrade the seismic qualification of the instrument racks, H21-P009 (Unit 2 only) and H21-P010 (Unit 1 and Unit 2), containing the B21-PT-N021C and B21-PT-N021D reactor steam dome pressure - low pressure transmitters, prior to either Brunswick Plant unit resuming operation. These instrument rack modifications will require that the 1-B21-PT-N021D, 2-B21-PT-N021C and 2-B21-PT-N021D pressure transmitters be taken out of service for a period of time that exceeds the Technical Specification specified restoration time for the equipment affected.

Current Requirement:

Technical Specification 3.3.3, ACTION a requires that with one or more inoperable emergency core cooling system (ECCS) actuation instrumentation channels, take the ACTION required by Table 3.3.3-1. With fewer than two OPERABLE reactor steam dome pressure - low (injection permissive) instruments per trip system, ACTION 31 of Table 3.3.3-1 requires that the associated ECCS be declared inoperable. The ECCS associated with these instruments are the low pressure coolant injection system (LPCI) and the core spray system.

Technical Specification 3.5.3.2 requires that two independent low pressure coolant injection subsystems of the residual heat removal system be OPERABLE when the unit is in OPERATIONAL CONDITION 1, 2, 3, 4, or 5. ACTION b of Technical Specification 3.5.3.2 states that in OPERATIONAL CONDITIONS 4 or 5 with one or more low pressure coolant injection subsystems inoperable, take the ACTION required by Specification 3.5.3.1. Technical Specification 3.5.3.1 requires that two independent core spray system subsystems to be OPERABLE when the unit is in OPERATIONAL CONDITION 1, 2, 3, 4, or 5. ACTION b.2 of Technical Specification 3.5.3.1 states that with both core spray system subsystems inoperable, operation may continue provided that at least one low pressure coolant injection subsystem is OPERABLE and both low pressure coolant injection subsystems are OPERABLE within 4 hours. Otherwise, suspend all operations that have a potential for draining the reactor vessel and verify that at least one low pressure coolant injection subsystem is OPERABLE within 4 hours.

Proposed Change:

The proposed amendment will allow a one-time revision to the requirements of Technical Specification 3.3.3, EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION, when in OPERATIONAL CONDITION 4 (COLD SHUTDOWN). The proposed amendment will allow the minimum number of operable channels for one reactor steam dome pressure - low instrumentation trip system to be temporarily reduced from two (2) channels to one (1) channel. During these instrument rack modifications for each unit, the following compensatory actions will be implemented:

- (1) The inoperable channel shall be placed in the condition that will satisfy the logic for allowing injection by the associated ECCS with the reactor steam dome pressure below $410 \text{ psig} \pm 15 \text{ psig}$.
- (2) Both channels in the other trip system shall be maintained OPERABLE.
- (3) The reactor vessel head vent shall be maintained in the open position.

Basis:

The Brunswick Plant design includes two low pressure Emergency Core Cooling Systems (ECCS) comprised of the core spray system and the low pressure coolant injection mode of the residual heat removal system. Both the core spray system and the residual heat removal system consist of two subsystems.

Technical Specification 3.5.3.1 requires that two independent core spray system (CSS) subsystems to be OPERABLE when the unit is in OPERATIONAL CONDITION 1, 2, 3, 4, or 5. Technical Specification 3.5.3.2 requires that two independent low pressure coolant injection subsystems of the residual heat removal system be OPERABLE when the unit is in OPERATIONAL CONDITION 1, 2, 3, 4, or 5.

The emergency core cooling system actuation instrumentation shown in Technical Specification Table 3.3.3-1 is required to be operable in the OPERATIONAL CONDITIONS specified therein. Actuation of either the low pressure coolant injection system or the core spray system occurs upon receipt of either of the following two signals:

1. Drywell pressure - high coincident with reactor steam dome pressure - low, or
2. Reactor vessel water level - low level 3

Either of the actuation signal combinations above would indicate conditions that may require injection of additional coolant to maintain reactor vessel inventory and would actuate the low pressure emergency core cooling systems. Following actuation, each of these systems is designed to inject when the pressure vessel pressure is less than the reactor steam dome pressure - low (injection permissive) setpoint ($410 \text{ psig} \pm 15 \text{ psig}$). The reactor steam dome pressure - low (injection permissive) logic is a one-out-of-two taken twice configuration.

Additionally, this instrumentation provides another logic function. When reactor vessel pressure is below $310 \pm 15 \text{ psig}$ and an initiation signal is present, the recirculation pump discharge and discharge bypass valves are signalled to close. This logic is intended to prevent diversion of low

pressure coolant injection flow through a ruptured recirculation pump suction line break.

Three of four instrument racks (instrument rack H21-P010 for Unit 1 and instrument racks H21-P009 and H21-P010 for Unit 2) containing one each of the four reactor steam dome pressure - low pressure transmitters require modification to restore seismic qualification to current licensing basis requirements. The instrument rack modifications will require that the reactor steam dome pressure transmitter (2-B21-PT-N021C for instrument rack H21-P009; 1-B21-PT-N021D and 2-B21-PT-N021D for instrument rack H21-P010) be taken out of service for approximately five (5) days. Technical Specification 3.3.3, ACTION b requires that with one or more inoperable emergency core cooling system (ECCS) actuation instruments, the ACTION required by Table 3.3.3-1 be followed. ACTION 31 of Table 3.3.3-1 requires that, with less than two OPERABLE reactor steam dome pressure - low (injection permissive) instruments per trip system, the associated ECCS be declared inoperable. The ECCS associated with these instruments are the low pressure coolant injection system (LPCI) and the core spray system. Note that the recirculation loop pump discharge valve actuation function of the reactor steam dome pressure - low (injection permissive) instruments is only applicable to the low pressure coolant injection system.

Technical Specification 3.5.3.2 requires that two independent low pressure coolant injection subsystems of the residual heat removal system be OPERABLE when the unit is in OPERATIONAL CONDITION 1, 2, 3, 4, or 5. ACTION b of Technical Specification 3.5.3.2 states that in OPERATIONAL CONDITIONS 4 or 5 with one or more low pressure coolant injection subsystems inoperable, take the ACTION required by Specification 3.5.3.1. Technical Specification 3.5.3.1 requires that two independent core spray system subsystems to be OPERABLE when the unit is in OPERATIONAL CONDITION 1, 2, 3, 4, or 5. ACTION b.2 of Technical Specification 3.5.3.1 states that with both core spray system subsystems inoperable, operation may continue provided that at least one low pressure coolant injection subsystem is OPERABLE and both low pressure coolant injection subsystems are OPERABLE within 4 hours. Otherwise, suspend all operations that have a potential for draining the reactor vessel and verify that at least one low pressure coolant injection subsystem is OPERABLE within 4 hours.

The proposed revision will allow, for each instrument rack modification, the minimum number of OPERABLE channels for one reactor steam dome pressure - low injection permissive instrument trip system to be temporarily reduced from two (2) channels to one (1) channel. During the periods when the affected instruments are out of service, the following compensatory actions will be implemented:

- (1) The inoperable reactor steam dome pressure - low (injection permissive) channel will be placed in the condition that will satisfy the logic for allowing injection by the associated ECCS with the reactor steam dome pressure below $410 \text{ psig} \pm 15 \text{ psig}$.
- (2) Both reactor steam dome pressure - low (injection permissive) channels in the other trip system will be OPERABLE.
- (3) The reactor vessel head vent will be maintained in the open position.

The first action compensates for the loss of instrumentation redundancy in the affected trip system by manually accomplishing the required function for ECCS injection. Both Brunswick Plant units are currently in COLD SHUTDOWN (OPERATIONAL CONDITION 4); therefore, a valid injection permissive signal (i.e., less than or equal to $410 \text{ psig} \pm 15 \text{ psig}$) is currently present.

The second action will ensure that normal reactor steam dome pressure - low instrumentation redundancy is available when the modification work is initiated. Because each instrument rack modification will be implemented separately, the redundancy of the reactor steam dome pressure

- low (injection permissive) function for the other trip system will not be affected. Additionally the operable channels in the other trip system will be capable of generating an automatic closure signal on a high pressure condition.

The third action is to compensate for the reduction in redundancy associated with closing the affected valves at pressures above the setpoints. Although the logic would be expected to function, this action ensures that even if the logic failed (due to the reduced redundancy) there would be no adverse effect. The closure of the injection valves protects the low pressure components of the low pressure coolant injection and core spray systems. The only credible event that would cause a pressure increase above the shutoff head of core spray (approximately 310 psig) for the current plant conditions would be due to filling the vessel to a near solid condition (most likely due to an inadvertent low reactor vessel level (low level #3) signal) combined with the effect of control rod drive injection and/or vessel inventory heatup. Maintaining the head vent line open will provide a flow path of adequate capacity to offset the effects of control rod drive flow and vessel inventory heatup.

Overall, these compensatory actions will ensure that the capability exists to actuate and inject low pressure emergency core cooling system flow, if required. They also ensure that the reduction of instrumentation redundancy for closing the injection valves will have no effect. It should be noted that the reactor vessel low water level and drywell high pressure signals which initiate the pumps for both the low pressure coolant injection system and core spray system are independent of the injection permissive function provided by the reactor steam dome pressure - low instrumentation. Because placing the inoperable reactor steam dome pressure - low (injection permissive) instrument in the condition that will satisfy the injection logic will not affect the actuation/initiation capability of the low pressure emergency core cooling systems, there will be no increase in the likelihood and no increase in the consequences of a reactor low level condition requiring low pressure emergency core cooling system actuation. Since the reactor vessel head vent will be maintained open, there will be no potential of a pressurization event that could damage the low pressure coolant injection or core spray systems.

Conclusion:

The proposed amendment will allow the minimum number of operable channels for one reactor steam dome pressure - low instrumentation trip system to be temporarily reduced from two (2) channels to one (1) channel. The compensatory measures outlined above will ensure the ability of LPCI and core spray to provide emergency core cooling system flow, if required. The compensatory measures will also ensure that the reduced redundancy for the injection valve closure will not lead to any adverse condition. The affected instruments will be removed from service on one occasion on Unit 1 and on two occasions on Unit 2.

ENCLOSURE 2

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENT
ECCS ACTUATION INSTRUMENTATION OPERABILITY

10 CFR 50.92 EVALUATION

The Commission has provided standards in 10 CFR 50.92(c) for determining whether a significant hazards consideration exists. A proposed amendment to an operating license for a facility involves no significant hazards consideration if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant increase in the probability or consequences of an accident previously evaluated, (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. Pursuant to 10 CFR 50.91(a)(1), Carolina Power & Light Company has reviewed this proposed license amendment request and determined that its adoption would not involve a significant hazards consideration. The bases for this determination are as follows:

Proposed Change:

The proposed amendment will allow a one-time revision to the requirements of Technical Specification 3.3.3, EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION, when in OPERATIONAL CONDITION 4 (COLD SHUTDOWN). The proposed amendment will allow the minimum number of operable channels for one reactor steam dome pressure - low instrumentation trip system to be temporarily reduced from two (2) channels to one (1) channel. During these instrument rack modifications for each unit, the following compensatory actions will be implemented:

- (1) The inoperable channel shall be placed in the condition that will satisfy the logic for allowing injection by the associated ECCS with the reactor steam dome pressure below 410 psig \pm 15 psig.
- (2) Both channels in the other trip system shall be maintained OPERABLE.
- (3) The reactor vessel head vent shall be maintained in the open position.

Basis:

The change does not involve a significant hazards consideration for the following reasons:

1. The proposed amendment does not involve a significant increase in the probability of an accident previously evaluated. The intent of the requirement that there be at least two operable injection permissive instrument channels per trip system is to ensure sufficient instrument redundancy exists such that a single instrument failure could not disable the ability to actuate and inject emergency core cooling, if required. No accident initiators or precursors are changed by the proposed one-time revision. Neither the low pressure emergency core cooling system actuation instrumentation nor the low pressure emergency core cooling system injection instrumentation will initiate an accident. The reactor vessel low water level and drywell high pressure signals that initiate the pumps for both the low pressure coolant

injection system and core spray system are independent of the injection permissive function provided by the reactor steam dome pressure - low instrument and are not affected by this change. Overall, the compensatory actions being taken will ensure that the capability exists to actuate and inject low pressure emergency core cooling system flow, if required. The actions will also compensate for the reduced redundancy of the injection valve closure logic. Therefore, there will be no increase in the probability of failure of the components of the low pressure coolant injection or core spray systems that could lead to an accident. Therefore, the one-time revision to allow the minimum number of operable channels for one reactor steam dome pressure - low instrumentation trip system to be temporarily reduced from two (2) channels to one (1) channel will not involve a significant increase in the probability of an accident previously evaluated.

The proposed amendment does not involve a significant increase in the consequences of an accident previously evaluated. The planned compensatory action of placing the affected injection permissive channel in the condition that satisfies the logic will ensure that there is no reduction of redundancy in the logic that assures the capability to actuate and inject low pressure emergency core cooling system flow, if required. The actions will also compensate for the reduced redundancy of the injection valve closure logic by ensuring that the logic will not be challenged. The reactor vessel low water level and drywell high pressure signals that initiate the pumps for both the low pressure coolant injection system and core spray system are independent of the injection permissive function provided by the reactor steam dome pressure - low instrument and are not affected by this change. Therefore, the proposed one-time revision to allow the minimum number of operable channels for one reactor steam dome pressure - low instrumentation trip system to be temporarily reduced from two (2) channels to one (1) channel does not involve a significant increase in the consequences of any accident previously evaluated.

2. The proposed amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated. The instruments affected are designed to provide a signal to open the injection valve for the low pressure emergency core cooling systems when the reactor vessel pressure is sufficiently low. The planned compensatory action to place the affected instrument channel in the condition that will satisfy the logic for allowing injection fulfills the instrument's safety function for emergency core cooling system injection. Also, requiring the three remaining instruments to be operable during the two periods will ensure that sufficient instrument redundancy is maintained for the injection logic. The actions will also compensate for the reduced redundancy of the injection valve closure logic by ensuring that the logic will not be challenged. The planned compensatory actions will therefore ensure that the emergency core cooling system actuation instrumentation logic will actuate as designed. Thus, the proposed one-time reduction in the required number of operable channels per trip system for the reactor steam dome low pressure injection permissive function does not create the possibility of a new or different kind of accident from any accident previously evaluated.
3. The proposed amendment does not involve a significant reduction in the margin of safety. The intent of the Technical Specification requirement that there be at least two operable injection permissive instrument channels per trip system is to ensure sufficient instrument redundancy exists such that a single instrument failure could not disable the ability to actuate and inject emergency core cooling, if required. The planned compensatory action of placing the affected injection permissive channel in the condition that satisfies the logic will ensure the capability to actuate and inject low pressure emergency core cooling system flow if required. The requirement that the remaining three injection permissive instruments be operable during the modification period will ensure sufficient redundancy is maintained such that the injection permissive logic will actuate if required. The planned compensatory actions

will also compensate for the reduced redundancy of the injection valve closure logic by ensuring that the logic will not be challenged. Therefore, based on the compensatory actions being taken the proposed one-time revision to allow the minimum number of operable channels for one reactor steam dome pressure - low instrumentation trip system to be temporarily reduced from two (2) channels to one (1) channel does not involve a significant reduction in the margin of safety.

ENCLOSURE 3

BRUNSWICK STEAM ELECTRIC PLANT, UNITS 1 AND 2
NRC DOCKET NOS. 50-325 & 50-324
OPERATING LICENSE NOS. DPR-71 & DPR-62
REQUEST FOR LICENSE AMENDMENT
ECCS ACTUATION INSTRUMENTATION OPERABILITY

ENVIRONMENTAL CONSIDERATIONS

10 CFR 51.22(c)(9) provides criterion for and identification of licensing and regulatory actions eligible for categorical exclusion from performing an environmental assessment. A proposed amendment to an operating license for a facility requires no environmental assessment if operation of the facility in accordance with the proposed amendment would not: (1) involve a significant hazards consideration; (2) result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite; (3) result in an increase in individual or cumulative occupational radiation exposure. Carolina Power & Light Company has reviewed this request and determined that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared in connection with the issuance of the amendment. The basis for this determination follows:

Proposed Change:

The proposed amendment will allow a one-time revision to the requirements of Technical Specification 3.3.3, EMERGENCY CORE COOLING SYSTEM ACTUATION INSTRUMENTATION, when in OPERATIONAL CONDITION 4 (COLD SHUTDOWN). The proposed amendment will allow the minimum number of operable channels for one reactor steam dome pressure - low instrumentation trip system to be temporarily reduced from two (2) channels to one (1) channel. During these instrument rack modifications for each unit, the following compensatory actions will be implemented:

- (1) The inoperable channel shall be placed in the condition that will satisfy the logic for allowing injection by the associated ECCS with the reactor steam dome pressure below $410 \text{ psig} \pm 15 \text{ psig}$.
- (2) Both channels in the other trip system shall be maintained OPERABLE.
- (3) The reactor vessel head vent shall be maintained in the open position.

Basis:

The change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9) for the following reasons:

1. As demonstrated in Enclosure 2, the proposed amendment does not involve a significant hazards consideration.
2. The proposed amendment does not result in a significant change in the types or significant increase in the amounts of any effluents that may be released offsite. The proposed amendment does not introduce any new equipment nor does it require any existing

equipment or systems to perform a different type of function than they are presently designed to perform. The instruments affected are designed to provide a signal, under accident conditions, to open the injection valve for the low pressure emergency core cooling systems when the reactor vessel pressure is sufficiently low. The proposed one-time amendment will not alter the function of this instrumentation, and the planned compensatory actions will ensure that the consequences of any previously evaluated accident are not increased. Therefore, there will not be a significant increase the types or amounts of any effluent that may be released offsite and, as such, the proposed amendment does not involve irreversible environmental consequences beyond those already associated with normal operation. As such, the change cannot affect the types or amounts of any effluents that may be released offsite.

3. The proposed amendment does not result in an increase in individual or cumulative occupational radiation exposure. The instrument racks being seismically upgraded are not physically located in an area with minimal background radiation exposure levels; therefore, neither the modifications nor implementation of the planned compensatory actions will have a significant affect on either individual or cumulative occupational radiation exposure.