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SUBJECT: Application for amend to License NPF-63, revising TSs to modify auxiliary feedwater sys surveillance & Bases Sections 4.7.1.2.1 & B 3/4.7.1.2, respectively, to add full flow surveillance test capability for motor & turbine subj pumps.

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NOTES: Application for permit renewal filed. 05000400

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Carolina Power & Light Company

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G. E. VAUGHN
Vice President
Nuclear Services Department

SERIAL: NLS-91-334
10 CFR 50.90

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

SHEARON HARRIS NUCLEAR POWER PLANT
DOCKET NO. 50-400/LICENSE NO. NPF-63
REQUEST FOR LICENSE AMENDMENT
AUXILIARY FEEDWATER SYSTEM SURVEILLANCE CHANGES

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 Shearon Harris Nuclear Power Plant (SHNPP). The proposed changes would modify the Auxiliary Feedwater System (AFW) Surveillance and BASES Sections, 4.7.1.2.1 and B 3/4.7.1.2 respectively, to add full flow surveillance test capability for both the motor and turbine-driven AFW pumps, provide consistent motor-driven and steam-driven AFW pump surveillance test acceptance criteria, acknowledge a revised AFW design flow, and provide consistent application of and reference to the non-applicability of Technical Specification 4.0.4 for the turbine-driven AFW pump.

The requested changes to the Technical Specifications would allow more direct and consistent measurement of AFW system variables as well as more consistent presentation of surveillance test requirements without negatively impacting the system's ability to perform its design purpose.

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

Enclosure 2 details the basis for the Company's determination that the proposed changes do not involve a significant hazards consideration.

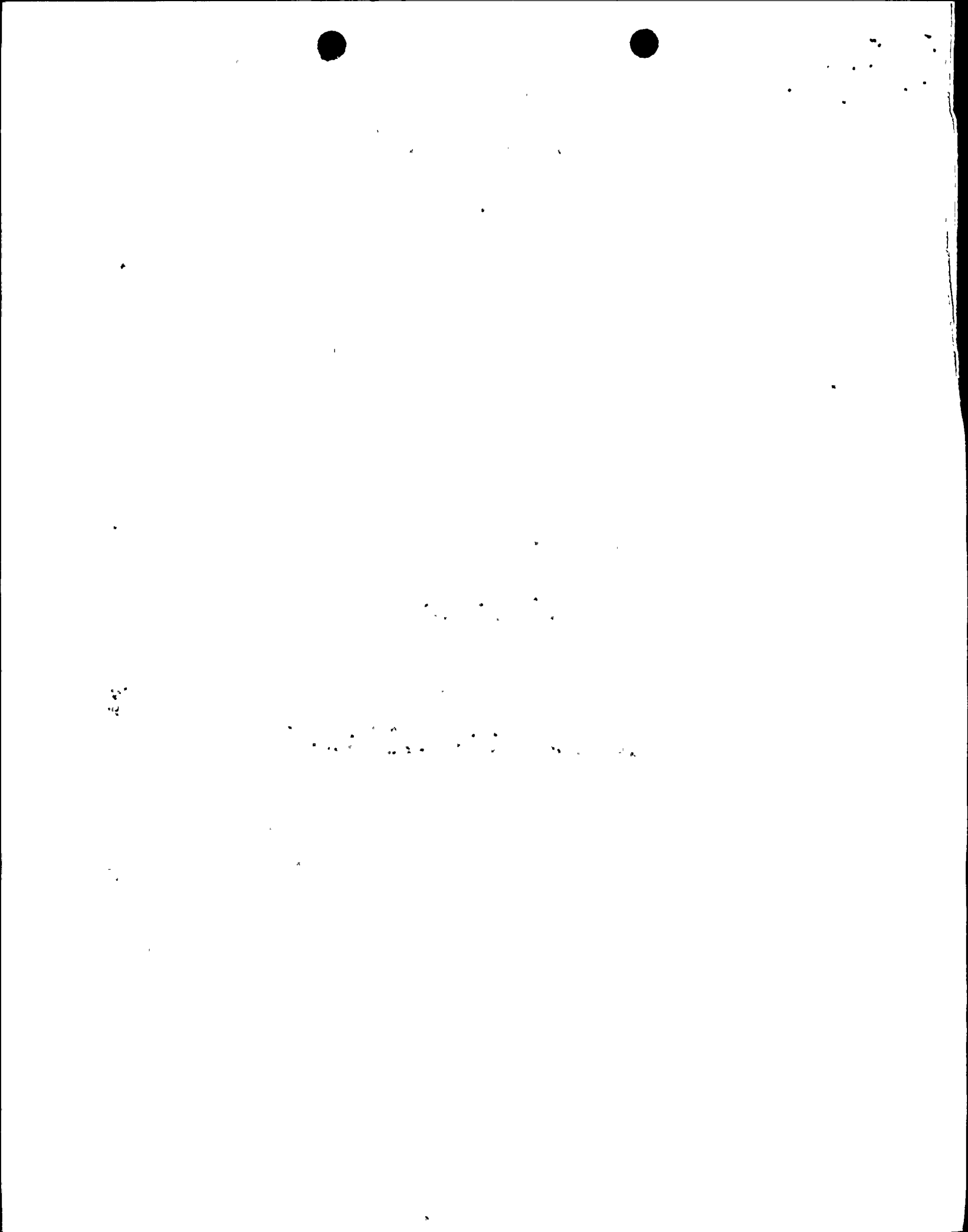
Enclosure 3 is an environmental evaluation which demonstrates that the proposed amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9); therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment needs to be prepared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

Enclosure 4 provides the proposed Technical Specification pages.

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 such that implementation will

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occur within 60 days of issuance of the amendment.

In accordance with 10 CFR 50.91(b), CP&L is providing the State of North Carolina with a copy of this letter.

Please refer any questions regarding this submittal to Mr. R. W. Prunty at (919) 546-7318.

Yours very truly,


G. E. Vaughn

GEV/SDC

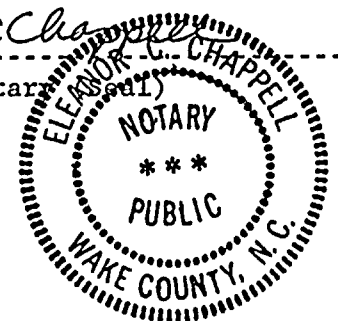
Enclosures:

1. Basis for Change Request
2. 10 CFR 50.92 Evaluation
3. Environmental Evaluation
4. Technical Specification Pages

cc: Mr. Dayne H. Brown
Mr. S. D. Ebnetter
Ms. B. L. Mozafari
Mr. J. E. Tedrow

G. E. Vaughn, 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: 2/6/96

Eleanor C. Chappell
Notary




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ENCLOSURE 1

SHEARON HARRIS NUCLEAR POWER PLANT
NRC DOCKET NO. 50-400/LICENSE NO. NPF-63
REQUEST FOR LICENSE AMENDMENT
AUXILIARY FEEDWATER SYSTEM SURVEILLANCE CHANGES

BASIS FOR CHANGE REQUEST

Proposed Change

The proposed changes would modify the Auxiliary Feedwater System (AFW) Surveillance and BASES Sections, 4.7.1.2.1 and B 3/4.7.1.2 respectively, to add full flow surveillance test capability for both the motor and turbine-driven AFW pumps, provide consistent motor-driven and turbine-driven AFW pump surveillance test acceptance criteria, acknowledge a revised AFW design flow, and provide consistent application of and reference to the non-applicability of Technical Specification 4.0.4 for the turbine-driven AFW pump.

The requested changes to the Technical Specifications would allow more direct and consistent measurement of AFW system variables as well as more consistent presentation of surveillance test requirements without negatively impacting the system's ability to perform its design purpose.

Basis

The design of the Auxiliary Feedwater System ensures that the Reactor Coolant System (RCS) can be cooled down to less than 350°F from normal operating conditions in the event of a total loss of offsite power. The AFW System design is such that its capacity is sufficient to ensure that adequate feedwater flow is available to remove decay heat and reduce the RCS temperature to less than 350°F, the point at which the Residual Heat Removal System may be placed into operation.

Addition of AFW Pump Full Flow Test Option

The purpose of the AFW pump surveillance tests is to verify that the motor-driven and turbine-driven AFW pumps are capable of delivering the minimum required AFW flow to the steam generators at a pressure great enough to overcome system losses and the steam generator pressure head. Typically, this is accomplished by verifying each pump operates at a level predicted by the pump performance curve for a given set of testing conditions. The current motor-driven AFW technical specification surveillance provides for a minimum recirculation flow test at 50 gpm and 1558 psid. The recirculation flow, or mini-flow, test is used because the AFW System design does not provide the capability of conducting a full flow test during power operation without delivering full flow to the steam generators, i.e., there is no full flow recirculation or redirection capability. As a result, full flow testing may add a thermal cycle to the steam generator AFW

nozzles. Although the mini-flow test avoids the potential thermal cycling and proves to be a satisfactory method of verifying AFW pump operability, small flow and pressure fluctuations in combination with the high pump discharge pressure cause a certain amount of oscillation in the pressure instrument readings. These oscillations can make it difficult to establish a precise average value for discharge pressure. At times, an average pressure reading has been recorded that was lower than the actual discharge pressure as determined by subsequent testing. This lower value may fall below the acceptance criterion and result in a pump being declaring inoperable, though the pump may actually be developing adequate discharge pressure. If the mini-flow test were to fail to verify pump operability, subsequent use of a full flow test may prevent an unnecessary declaration of pump inoperability. Accordingly, acceptance criteria for a full flow surveillance test of the motor and turbine-driven pumps have been included as a testing option in this request.

AFW Pump Test Acceptance Criteria Consistency

The current mini-flow surveillance requirements for the motor-driven AFW pumps specify a minimum pump discharge flow at a minimum temperature-compensated pump differential pressure. The current surveillance requirements for the turbine-driven pump specify a minimum discharge flow at a minimum pump discharge pressure (given a specified turbine inlet steam pressure). This Technical Specification Change Request proposes to utilize consistent acceptance criteria for both the motor-driven and turbine-driven pumps mini-flow and full flow tests based on a specified flowrate at a given temperature-compensated differential pressure. These differential pressures have been revised to reflect the analyzed minimum required pump curve in lieu of the design pump curve. Use of a pump differential pressure provides a better measure of pump performance by eliminating the impact of varying AFW pump supply pressure (i.e., supply tank level). Also, compensating test results for a basis temperature of 70°F provides for a consistent interpretation of test results and allows a single differential pressure value to be specified as the acceptance criterion. These changes provide for a more accurate assessment of pump capability and minimize the possibility of a pump being declared inoperable based on small pressure fluctuations at low flow rates.

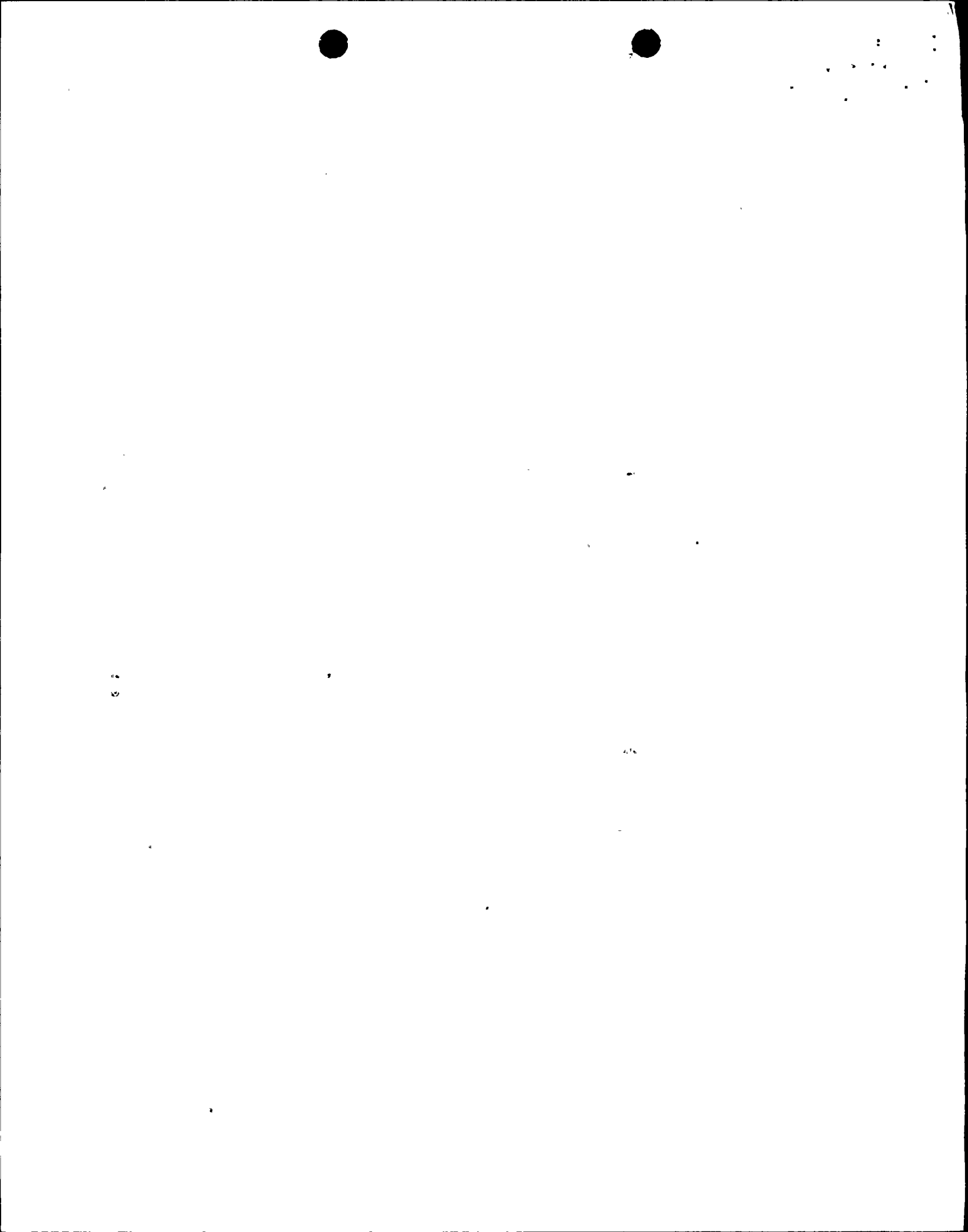
An additional change to the turbine-driven full flow surveillance relates to the secondary side steam inlet pressure. The current steam turbine-driven AFW pump surveillance acceptance criteria for recirculation flow specifies the minimum secondary steam supply pressure as 210 psig. This supply pressure was derived from the turbine and feedwater pump performance curves and ensures the turbine can develop the necessary horsepower to drive the pump at rated speed and 90 gpm (the recirculation flow rate). In order to supply the 430 gpm flow for the full flow test, the minimum steam inlet pressure must be increased to provide greater horsepower commensurate with the increase in flow. Therefore, based on the steam turbine and feedwater pump performance curves, the turbine-driven AFW pump full flow test criteria specify secondary side steam inlet pressure greater than 280 psig.

AFW Pump Design Basis Flow

This Technical Specification Change Request would revise the Bases, Section B3/4.7.1.2, to reflect the updated design flow for the AFW pumps. The purpose of the AFW System is to provide sufficient cooling water to the steam generators to mitigate any design basis accident. Three AFW pumps (two motor-driven, one turbine driven) are provided to that ensure sufficient cooling can be supplied, even assuming a single failure. The minimum AFW flow required to mitigate the limiting design basis accident was originally established as 475 gpm based on Westinghouse analyses of the Chapter 15 accident scenarios. This AFW pump required flow rate was incorporated into the descriptive text of the Technical Specifications Bases Section for the Auxiliary Feedwater System. The SHNPP FSAR Chapter 15 accidents have since been reanalyzed and verified to be effectively mitigated with an AFW flow rate of 430 gpm. This Technical Specification Change Request incorporates the revised AFW minimum flow rate of 430 gpm into the acceptance flow criteria for the new motor-driven and turbine-driven AFW pump full flow test surveillances and into the Technical Specification Bases Section B 3/4.7.1.2.

Technical Specification 4.0.4

Testing of the turbine-driven AFW pump prior to entry into Mode 3, Hot Standby, is impossible as there is inadequate steam pressure to perform the test. Technical Specification 4.7.1.2.1.a.2, which provides the current turbine-driven pump minimum flow recirculation test, recognizes that fact and specifies that specification 4.0.4 is not applicable. This change would extend this statement to the new Section 4.7.1.2.1.b.1, full flow testing option, for the turbine-driven AFW pump.



ENCLOSURE 2

SHEARON HARRIS NUCLEAR POWER PLANT
NRC DOCKET NO. 50-400/LICENSE NO. NPF-63
REQUEST FOR LICENSE AMENDMENT
AUXILIARY FEEDWATER SYSTEM SURVEILLANCE CHANGES

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. Carolina Power & Light Company has reviewed this proposed license amendment request and determined that its adoption would not involve a significant hazards determination. The bases for this determination are as follows:

Proposed Change

The proposed changes would modify the Auxiliary Feedwater System (AFW) Surveillance and BASES Sections, 4.7.1.2.1 and B 3/4.7.1.2 respectively, to add full flow surveillance test capability for both the motor and turbine-driven AFW pumps, provide consistent motor-driven and steam-driven AFW pump surveillance test acceptance criteria, acknowledge a revised AFW design flow, and provide consistent application of and reference to the non-applicability of Technical Specification 4.0.4 for the turbine-driven AFW pump.

The requested changes to the Technical Specifications would allow more direct and consistent measurement of AFW system variables as well as more consistent presentation of surveillance test requirements without negatively impacting the system's ability to perform its design purpose.

Basis

This 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 or consequences of an accident previously evaluated.

The proposed changes revise only the surveillance requirements and Bases description associated with the motor-driven and turbine-driven AFW pumps. No safety-related equipment, safety function or plant operations will be altered as a result of these proposed changes. The revisions do not change the function, materials, or construction standards applicable to

the AFW pumps.

Incorporation of 1) an optional full flow test acceptance criteria, 2) consistency of acceptance criteria and 3) uniform reference to Specification 4.0.4 provides additional testing latitude of a quality and nature equivalent to the existing surveillance requirements for the mini-flow tests as well as consistency within the AFW Surveillance criteria. These changes have no affect on the probability or consequences of an accident previously evaluated.

The proposed incorporation of the revised design basis flow of 430 gpm into the Bases and as the acceptance flow criterion in the full flow test continues to ensure that each AFW pump is capable of delivering a total feedwater flow at sufficient pressure to the entrance of the steam generators. This capacity continues to be sufficient to ensure that feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F when the Residual Heat Removal System may be placed into operation. The lower design flow is acceptable based on reanalysis of FSAR Chapter 15 accident Scenarios.

Therefore, the described changes would have no impact on the probability or consequences of an 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 proposed change revises the surveillance requirements associated with the motor-driven and turbine-driven AFW pumps. No safety-related equipment, safety function or plant operations will be altered as a result of this proposed change. The revision does not change the function, materials, or construction standards applicable to the AFW pumps.

Incorporation of 1) an optional full flow test acceptance criteria, 2) consistency of acceptance criteria and 3) uniform reference to Specification to 4.0.4 provides additional testing lattitude of a quality and nature equivalent to the existing surveillance requirements for the mini-flow tests as well as consistency within the AFW Surveillance criteria. These changes have no affect the possibility of creating a new or different accident from any accident previously evaluated.

The proposed incorporation of the revised design basis flow of 430 gpm into the Bases and as the acceptance flow criterion in the full flow test continues to ensure that each AFW pump is capable of delivering a total feedwater flow at sufficient pressure to the entrance of the steam generators. This capacity continues to be sufficient to ensure that feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F when the Residual Heat Removal System may be placed into operation. The lower design flow is acceptable based on reanalysis of FSAR Chapter 15 accident Scenarios.

Therefore, the proposed changes do 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 proposed change revises the surveillance requirements associated with the motor-driven and turbine-driven AFW pumps. No safety-related equipment, safety function or plant operations will be altered as a result of this proposed change. The revision does not change the function, materials, or construction standards applicable to the AFW pumps.

Incorporation of 1) an optional full flow test acceptance criteria, 2) consistency of acceptance criteria and 3) uniform reference to Specification to 4.0.4 provides additional testing latitude of a quality and nature equivalent to the existing surveillance requirements for the mini-flow tests as well as consistency within the AFW Surveillance criteria. These changes have no affect on the margin of safety.

The proposed incorporation of the revised design basis flow of 430 gpm into the Bases and as the acceptance flow criterion in the full flow test continues to ensure that each AFW pump is capable of delivering a total feedwater flow at sufficient pressure to the entrance of the steam generators. This capacity continues to be sufficient to ensure that feedwater flow is available to remove decay heat and reduce the Reactor Coolant System temperature to less than 350°F when the Residual Heat Removal System may be placed into operation. The lower design flow is acceptable based on reanalysis of FSAR Chapter 15 accident Scenarios.

Therefore, the proposed changes do not involve a significant reduction in a margin of safety.

ENCLOSURE 3

SHEARON HARRIS NUCLEAR POWER PLANT
NRC DOCKET NO. 50-400/LICENSE NO. NPF-63
REQUEST FOR LICENSE AMENDMENT
AUXILIARY FEEDWATER SYSTEM SURVEILLANCE CHANGES

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 changes would modify the Auxiliary Feedwater System (AFW) Surveillance and BASES Sections, 4.7.1.2.1 and B 3/4.7.1.2 respectively, to add full flow surveillance test capability for both the motor and turbine-driven AFW pumps, provide consistent motor-driven and steam-driven AFW pump surveillance test acceptance criteria, acknowledge a revised AFW design flow, and provide consistent application of and reference to the non-applicability of Technical Specification 4.0.4 for the turbine-driven AFW pump.

The requested changes to the Technical Specifications would allow more direct and consistent measurement of AFW system variables as well as more consistent presentation of surveillance test requirements without negatively impacting the system's ability to perform its design purpose.

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 change only revises the surveillance requirements and required minimum design flow from the AFW pumps. 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 currently designed to perform. 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 proposed change only substitutes revised design flows and surveillance acceptance criteria into an existing surveillance requirement. No additional surveillances or testing results from the amendment. Therefore, the amendment has no affect on either individual or cumulative occupational radiation exposure.