



OCT 19 2004

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

SERIAL: HNP-04-151

SHEARON HARRIS NUCLEAR POWER PLANT  
DOCKET NO. 50-400/LICENSE NO. NPF-63  
TECHNICAL SPECIFICATION BASES CHANGE: Undervoltage and Underfrequency – Reactor  
Coolant Pump Buses

Ladies and Gentlemen:

Harris Nuclear Plant (HNP) is providing a revised Technical Specifications (TS) Bases page for TS 2.2.1, "Reactor Trip System Instrumentation Setpoints" for the Undervoltage and Underfrequency – Reactor Coolant Pump Buses. This TS Bases change is being made as an improvement to provide clarification wording consistent with TS 1.29 Definitions, TS 4.3.1.2 Surveillance Requirements, and Final Safety Analysis Report Sections 5.4.1.3, 7.2.1, 15.0.6 and 16.3.

The revised TS Bases page is provided in the Attachment to this letter.

Please refer any questions regarding this subject to me at (919) 362-3137.

Sincerely,

A handwritten signature in black ink, appearing to read "David H. Corlett".

David H. Corlett  
Supervisor –  
Licensing and Regulatory Programs  
Harris Nuclear Plant

DHC/rgb

Attachment:

c:

Mr. R. A. Musser, NRC Sr. Resident Inspector  
Mr. C. P. Patel, NRC Project Manager  
Dr. W. D. Travers, NRC Regional Administrator

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SHEARON HARRIS NUCLEAR POWER PLANT  
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TECHNICAL SPECIFICATIONS BASES CHANGE  
Undervoltage and Underfrequency – Reactor Coolant Pump Buses

TECHNICAL SPECIFICATION BASES PAGE

B 2-6

# LIMITING SAFETY SYSTEM SETTINGS

## BASES

### Reactor Coolant Flow (Continued)

(a power level of approximately 49% of RATED THERMAL POWER) an automatic Reactor trip will occur if the flow in any single loop drops below 90.5% of nominal full loop flow. Conversely, on decreasing power between P-8 and the P-7 an automatic Reactor trip will occur on low reactor coolant flow in more than one loop and below P-7 the trip function is automatically blocked.

### Steam Generator Water Level

The Steam Generator Water Level Low-Low trip protects the reactor from loss of heat sink in the event of a sustained steam/feedwater flow mismatch resulting from loss of normal feedwater. The specified Setpoint provides allowances for starting delays of the Auxiliary Feedwater System.

### Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level

The Steam/Feedwater Flow Mismatch in coincidence with a Steam Generator Low Water Level trip is not used in the transient and accident analyses but is included in Table 2.2-1 to ensure the functional capability of the specified trip settings and thereby enhance the overall reliability of the Reactor Trip System. This trip is redundant to the Steam Generator Water Level Low-Low trip. The Steam/Feedwater Flow Mismatch portion of this trip is activated when the steam flow exceeds the feedwater flow by the setpoint value. The Steam Generator Low Water level portion of the trip is activated when the setpoint value is reached, as indicated by the narrow range instrument. These trip values include sufficient allowance in excess of normal operating values to preclude spurious trips but will initiate a Reactor trip before the steam generators are dry. Therefore, the required capacity and starting time requirements of the auxiliary feedwater pumps are reduced and the resulting thermal transient on the Reactor Coolant System and steam generators is minimized.

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### Undervoltage and Underfrequency - Reactor Coolant Pump Buses

The Undervoltage and Underfrequency Reactor Coolant Pump Bus trips provide core protection against DNB as a result of complete loss of forced coolant flow. The specified Setpoints assure a Reactor trip signal is generated before the Low Flow Trip Setpoint is reached. Time delays are incorporated in the Underfrequency and Undervoltage trips to prevent spurious Reactor trips from momentary electrical power transients. For undervoltage, the delay is set so that the time required for a signal to reach the Reactor trip breakers following the simultaneous trip of two or more reactor coolant pump bus circuit breakers shall not exceed 1.2 seconds. For underfrequency, the delay is set so that the time required for a signal to reach the Reactor trip breakers after the Underfrequency Trip Setpoint is reached shall not exceed 0.3 second.

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On decreasing power the Undervoltage and Underfrequency Reactor Coolant Pump Bus trips are automatically blocked by the loss of P-7 (a power-level of approximately 10% of RATED THERMAL POWER or a turbine impulse chamber pressure

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## LIMITING SAFETY SYSTEM SETTINGS

### BASES

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(a power level of approximately 49% of RATED THERMAL POWER) an automatic Reactor trip will occur if the flow in any single loop drops below 90.5% of nominal full loop flow. Conversely, on decreasing power between P-8 and the P-7 an automatic Reactor trip will occur on low reactor coolant flow in more than one loop and below P-7 the trip function is automatically blocked.

#### Steam Generator Water Level

The Steam Generator Water Level Low-Low trip protects the reactor from loss of heat sink in the event of a sustained steam/feedwater flow mismatch resulting from loss of normal feedwater. The specified Setpoint provides allowances for starting delays of the Auxiliary Feedwater System.

#### Steam/Feedwater Flow Mismatch and Low Steam Generator Water Level

The Steam/Feedwater Flow Mismatch in coincidence with a Steam Generator Low Water Level trip is not used in the transient and accident analyses but is included in Table 2.2-1 to ensure the functional capability of the specified trip settings and thereby enhance the overall reliability of the Reactor Trip System. This trip is redundant to the Steam Generator Water Level Low-Low trip. The Steam/Feedwater Flow Mismatch portion of this trip is activated when the steam flow exceeds the feedwater flow by the setpoint value. The Steam Generator Low Water level portion of the trip is activated when the setpoint value is reached, as indicated by the narrow range instrument. These trip values include sufficient allowance in excess of normal operating values to preclude spurious trips but will initiate a Reactor trip before the steam generators are dry. Therefore, the required capacity and starting time requirements of the auxiliary feedwater pumps are reduced and the resulting thermal transient on the Reactor Coolant System and steam generators is minimized.

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On decreasing power the Undervoltage and Underfrequency Reactor Coolant Pump Bus trips are automatically blocked by the loss of P-7 (a power-level of approximately 10% of RATED THERMAL POWER or a turbine impulse chamber pressure