Progress Energy

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U.S. Nuclear Regulatory Commission
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Washington, DC 20555

SHEARON HARRIS NUCLEAR POWER PLANT, UNIT NO. 1
DOCKET NO. 50-400 / LICENSE NO. NPF-63

60-DAY RESPONSE TO NRC BULLETIN 2003-01 FOR POTENTIAL IMPACT OF DEBRIS BLOCKAGE ON EMERGENCY SUMP RECIRCULATION AT PRESSURIZED-WATER REACTORS

Ladies and Gentlemen:

On June 9, 2003, the Nuclear Regulatory Commission (NRC) issued NRC Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors." This NRC Bulletin informs licensees of the potential for additional adverse effects due to debris blockage of flowpaths necessary for Emergency Core Cooling System (ECCS) and Containment Spray System (CSS) recirculation and containment drainage. These additional effects were based on NRC-sponsored research that identified the potential susceptibility of pressurized-water reactor (PWR) recirculation sump screens to debris blockage in the event of a high-energy line break (HELB) that would require ECCS and CSS operation in the recirculation mode.

Licensees are requested to provide a response within 60 days of the date of the NRC Bulletin to either: 1) state that the ECCS and CSS recirculation functions have been analyzed with respect to the potentially adverse post-accident debris blockage effects identified in the NRC Bulletin and are in compliance with 10 CFR 50.46(b)(5) and all existing applicable regulatory requirements (Option 1), or 2) describe any interim compensatory measures that have been or that will be implemented to reduce the risk that may be associated with the potentially degraded or nonconforming ECCS and CSS recirculation functions until an evaluation to determine compliance has been completed (Option 2).

Option 2 of this NRC Bulletin also requests:

"If any of the interim compensatory measures listed in the Discussion section will not be implemented, provide a justification. Additionally, for any planned interim measures that will not be in place prior to your response to this bulletin, submit an implementation schedule and provide the basis for concluding that their implementation is not practical until a later date."

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Attachment 1 provides the requested information for Option 2 of this NRC Bulletin for the Harris Nuclear Plant (HNP).

Attachment 2 provides the design layout and details of the HNP containment recirculation sumps.

Attachment 3 provides the commitments associated with HNP's response.

Please refer any questions regarding this submittal to Mr. John R. Caves, Supervisor – Licensing/Regulatory Programs, at (919) 362-3137.

Sincerely,

James Scarola

JS/jpy

Attachments
1. NRC Bulletin 2003-01 Response
2. Design Layout and Details of the HNP Containment Recirculation Sumps
3. Commitments

Jim Scarola, 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 employees, contractors, and agents of Progress Energy Carolinas, Inc.

Darlene S. Yarborough

DARLENE S. YARBOROUGH NOTARY *** PUBLIC HARNETT COUNTY, NC

Notary (Seal)
My commission Expires:

My Comm. Exp. 2-21-2005.

c: Mr. R. A. Musser (NRC Senior Resident Inspector)
Ms. B. O. Hall (Section Chief, N.C. DENR)
Mr. C. P. Patel (NRR Project Manager, NRC)
Mr. L. A. Reyes (NRC Regional Administrator, Region II)

PROGRESS ENERGY CAROLINAS, INC.

SHEARON HARRIS NUCLEAR POWER PLANT UNIT 1

DOCKET NO. 50-400/LICENSE NO. NPF-63

ATTACHMENTS

60-Day Response for NRC Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized Water Reactors"

NRC BULLETIN REQUEST

Bulletin 2003-01 requests that individual PWR licensees submit information within 60 days that either:

1. states that analyses of the ECCS and CSS recirculation functions have been performed, with respect to post accident debris effects, and that compliance exists with all applicable regulatory requirements;

OR

2. describes any interim compensatory measures that have been implemented, or will be implemented, to reduce the risk which may be associated with potentially degraded or nonconforming ECCS and CSS recirculation functions while evaluations to determine compliance proceed.

Detailed analyses have not been performed at HNP to demonstrate compliance exists with 10 CFR 50.46(b)(5), and other existing applicable regulatory requirements, relative to the potentially adverse post-accident debris blockage effects identified in Bulletin 2003-01. Therefore, response Option 2 will be pursued and certain recirculation sump interim compensatory measures will be implemented to reduce the risk which may be associated with potentially degraded or nonconforming ECCS and containment spray recirculation functions while evaluations to determine compliance proceed.

Certain interim compensatory measures described herein will not be complete within the sixty-day response window. The risk associated with not having these actions complete immediately is mitigated by the following: a large-break loss-of-coolant accident (LOCA) (the event most likely to lead to potential sump clogging) has a low probability of occurring, the HNP sump design is not highly susceptible to clogging, operators currently are trained on the indications of pump cavitation, and in the event of a LOCA, the Emergency Response Organization would be activated, and technical personnel in the Technical Support Center (TSC) would be available to evaluate any sump blockage and direct appropriate action.

Summary Description of the HNP Containment Sump Design:

The HNP Containment Sumps are raised structures that are 36' long x 11' deep x a maximum of 6' wide and are located outside the secondary bio-shield wall on the Northeast and Southeast sides of reactor building. The nominal floor in containment is at 221' elevation, the top of the sump is at 227' elevation, and the bottom of the sump is at 216' elevation. The sump screen is a 6-piece assembly of vertical convoluted drilled plate screen sections, each 48" wide x 46" tall x 15" deep, equating to a frontal area of 92 square feet for each sump. Each screen section is individually supported internally and along its perimeter by structural steel members. The trash rack is fabricated from ½" square bars set on 2" centers (1.5" x 1.5" openings) and covers the frontal area of the sump screen. The drilled plate screen has a total area of 398 square feet per sump and has 0.125" diameter perforations for a total effective (clear opening) area of 159 square

feet for each sump (318 square feet for both sumps). The sump screens are protected by a 1.5' high curb. The top of the sump is covered with solid checkered deck plate. Vortex suppressor grating is installed in each sump. Refer to Attachment 2 for containment basement layout, configuration details of the sump screens, and a photograph of one of the sumps.

The HNP recirculation sumps are separated by ninety degrees of arc. Each recirculation sump serves one train of low head safety injection and one train of containment spray.

Responses To Bulletin 2003-01 Compensatory Measures

The following discusses the six proposed interim compensatory measures listed in NRC Bulletin 2003-01 and the HNP response to each one:

Compensatory Measure 1: Operator Training on Indications of and Responses to Sump Clogging

The HNP Emergency Operating Procedures (EOPs) include instructions to monitor containment wide range and recirculation sump level instruments and instructions to secure affected RHR and containment spray pumps if recirculation sump level will not support continued operation. The EOPs also contain instructions consistent with the Westinghouse Owner's Group (WOG) Emergency Response Guidelines (ERGs) to minimize depletion of the Refueling Water Storage Tank (RWST) if recirculation capability cannot be established or is lost while performing the actions to complete the recirculation alignment. All licensed personnel receive initial classroom and simulator training on these EOP actions and periodic continuing training. Additionally, personnel receive general training on the indications of pump distress due to loss of NPSH, such as erratic current, flow, or discharge pressure.

Additional training specific to the Generic Safety Issue -191 will be conducted to address the indications and responses to sump clogging. The training will be conducted in two phases. The first phase of the training will consist of general information regarding Generic Safety Issue -191 and will include the following topics:

- History of the sump clogging issues
- General discussion of the phenomenon
- Discussion of the generic indications associated with sump clogging (e.g. sump level, pump flow, pressure, and current oscillations, etc.)
- Discussion of the proposed generic mitigation strategies for sump clogging (e.g. throttling pumps taking suction from the sump)

This training will be provided to all licensed operators during the next scheduled session of Licensed Operator Continuing Training (LOCT). The training for all affected personnel will be completed by 30 September 2003.

The second phase of this training will consist of classroom training on the plant-specific indications and mitigating strategies developed for HNP and being incorporated into the Emergency Operating Procedures. This training will also be provided to all licensed operators and designated members of the Accident Assessment Team (AAT) during a subsequent session of LOCT and will be completed by 31 December 2003.

The HNP simulator has the capability to model sump screen blockage by demonstrating the symptoms of a blocked screen. Enhancements to this modeling of sump blockage are underway.

The following indications/instruments are available to identify containment recirculation sump blockage:

- Containment recirculation sump level (level transmitter is located downstream of the sump screens)
- Containment wide-range sump level
- Containment recirculation sump low-level alarm
- Low head safety injection pump current
- Low head safety injection flow
- Low head safety injection pump discharge pressure
- Low head safety injection pump differential pressure
- Low head safety injection pump vibration
- Containment spray pump discharge low pressure alarm
- Containment spray pump suction low pressure alarm
- Computer alarm low head safety injection
- Low head safety injection loop low flow alarm
- Low head safety injection pump low differential pressure alarm

The containment recirculation sump level and containment wide-range sump level indications can be used to estimate the severity of sump screen clogging. The wide-range sump level elements are located upstream of the sump screen, and the recirculation sump level elements are located downstream of the screen. Correlation between the instrument ranges (to be provided in the EOPs) will allow an estimate of the differential water level across the screens. All wide range and recirculation sump level elements are environmentally qualified.

It is appropriate to revise applicable procedures to list indications of recirculation sump blockage and actions to take if a sump becomes blocked. HNP will revise Emergency Operating Procedures EOP-EPP-010 and EOP-EPP-011 to include the plant-specific indications of recirculation sump blockage and potential mitigating actions.

The HNP EOPs designate actions and evaluations to be performed by TSC personnel through use of the term "plant operations staff". In the event TSC personnel are not available to perform the directed action/evaluation, the Main Control Room (MCR) crew assumes the responsibility until the TSC is functional.

The revisions to EOP-EPP-010 will include the following:

- A detailed list of indications of sump screen blockage.
- Instructions to initiate refill of the RWST using the Reactor Makeup Water System
- A table that correlates containment elevations, wide range sump level, and recirculation sump level.
- General descriptions of potential mitigating actions including the advantages and disadvantages of each.
- Instructions for the control room operators and TSC personnel to monitor and evaluate the applicable indications.
- Instructions for realigning the Charging Safety Injection Pump (CSIP) suction to the RWST in the event this action is required to maintain/restore ECCS injection.
- Guidance that implementation of mitigating actions will likely constitute a deviation from license conditions and will require invoking 10 CFR 50.54x.
- Guidance that monitoring of the identified instruments and evaluation of potential mitigating actions is to continue after implementation of EOP-EPP-010 is completed.

Potential mitigating actions to be described in the procedure include the following:

- Stopping one or both trains of Containment Spray
- Stopping one train of ECCS (one low-head SI pump and one CSIP)
- Throttling low-head SI flow
- Initiating additional makeup to the RWST (from sources other than CVCS)
- Aligning alternate sources (other than the RWST) to inject into the RCS

The revision to EOP-EPP-011 will include a NOTE to remind personnel that the monitoring and evaluation initiated in EOP-EPP-010 is to continue during implementation.

The TSC includes a shift technical advisor (STA) in each AAT who will be automatically included in the LOCT. Also, the Technical Analysis Director (TAD), AAT-Mechanical, and AAT-Core Performance positions in the TSC will be trained on signs of sump screen blockage by including those personnel in the LOCT classes.

Planned Actions to Address Compensatory Measure 1

- Action 1: Provide initial session of operator training for licensed operators and licensed operator trainees on indications of sump blockage, scheduled to be complete on 30 September 2003.
- Action 2: Revise EOPs to support the response for NRC Bulletin 2003-01 and provide detailed training on indications of sump blockage and potential mitigating actions to operators in LOCT and to Technical Analysis Director, AAT-

Mechanical, and AAT-Core Performance personnel in the TSC, scheduled to be complete by 31 December 2003.

- Action 3: Update simulator to model containment recirculation sump screen blockage to support response to NRC Bulletin 2003-01, scheduled to be complete by 6 October 2003.

Basis for actions not complete by 8 August 2003:
Actions to revise procedures and conduct training will take longer than the sixty-day response window because the procedure revisions must undergo thorough technical and 10 CFR 50.59 reviews and all of the operators must cycle through the training.

Compensatory Measure 2: Procedural modifications, if appropriate, that would delay the switchover to containment sump recirculation (e.g., shutting down redundant pumps that are not necessary to provide required flows to cool the containment and reactor core, and operating the CSS intermittently)

The HNP licensing basis General Design Criteria (GDC) require that accident analysis acceptance criteria still be met with the assumption of a single active failure. Proposed actions to stop ECCS or CS pumps or throttle flow, concurrent with a single failure, could create conditions that have not been considered in the current design basis safety analyses and potentially increase the consequences of an accident in the expected event of the sumps not becoming blocked or obstructed. This recommendation cannot be implemented and have the plant continue to satisfy current licensing basis commitments.

The Westinghouse Owners Group (WOG) has published "Transmittal of Response Template for NRC Bulletin 2003-01, "Potential Impact of Debris Blockage on Emergency Sump Recirculation at Pressurized-Water Reactors". This WOG publication contains the following comments relative to Compensatory Measure 2.

- Operator actions to stop ECCS or containment spray pumps or throttle flow may result in conditions that are either outside of the design basis safety analyses assumptions or violate the design basis safety analyses assumptions (single failure). This would result in the potential for creating conditions that would make the optimal recovery more challenging (e.g., stopping containment spray impacts containment fission product removal, containment sump pH and equipment environment qualification design basis requirements).

- These actions would be inconsistent with the overall WOG ERG philosophy. The WOG ERGs are symptom-based procedures that provide for the monitoring of plant parameters and prescribe actions based on the response of those parameters. To avoid the risk of taking an incorrect action for an actual event, the WOG ERGs do not prescribe contingency actions until symptoms that warrant those contingency actions are identified.

- These actions would be inconsistent with the current operator response using the WOG ERGs that has been established through extensive operator training. The expected operator response is based on the optimal set of actions considering both design basis accidents and accidents outside the design basis. The WOG ERG operator response is not limited to a specific accident progression in order to provide optimal guidance for a wide range of possible accidents.

Other reasons include the following:

- HNP may have single-failure vulnerabilities that would result in a period of no core flow if such a compensatory measure is enacted.
- HNP has two recirculation sumps separated by ninety degrees of arc. Each recirculation sump serves one train of low head safety injection and one train of

containment spray. Each recirculation sump has six vertically-mounted screens fronted by a vertically-mounted trash rack. The total screen area per sump is 398 square feet. HNP is not highly susceptible to sump blockage based on the redundant sumps, overall sump screen size, and sump screen orientation.

Any generic changes to the WOG ERG guidance will be evaluated as part of an Owners Group program and incorporated into HNP EOPs as appropriate (WOG review of the ERGs is currently in progress).

Planned Actions to Address Compensatory Measure 2:

- Action 1: Review generic changes to the WOG ERG guidance as part of an Owners Group program and incorporate changes into HNP EOPs as appropriate.

Basis for actions not complete by 8 August 2003:
The WOG ERG guidance is currently under review; thus, this action cannot be completed until the guidance is issued to the industry.

Compensatory Measure 3: Ensuring that Alternative Water Sources are Available to Refill the RWST or to Otherwise Provide Inventory to Inject into the Reactor Core and Spray into the Containment Atmosphere

A. Alternate sources to refill the RWST

HNP currently has procedural guidance for filling the RWST and for transferring water from the fuel pool transfer canals to the RWST. HNP will revise its EOPs to direct operators to commence refilling the RWST upon switchover to recirculation. Training on this procedure revision will be similar to that for Interim Compensatory Measure #1; an initial session of indoctrination LOCT is scheduled for completion by 30 September 2003, and a follow-up session of LOCT is scheduled for completion by 31 December 2003.

The alternate sources identified to refill the RWST include the following:

- Reactor Water Makeup
- Fuel Pool Transfer Canals
- Demineralized Water
- Fire Service water

Makeup using the Reactor Water Makeup System is consistent with the current instructions in the EOPs. The EOPs reference an existing plant procedure to perform the RWST fill. Makeup from the Fuel Pool Transfer Canals is an alternative that provides a significant volume of water with a boron concentration consistent with that of the RWST. The EOPs will be revised to refer to an existing plant operating procedure to perform this action. Demineralized water and Fire Service Water are listed in SAMG SAG-003, "Inject Into The RCS". The SAMG identifies the valves that must be manipulated, but does not provide a step-by-step description of the required actions. The EOPs will be revised to reference the SAMGs for use of these water sources.

The transition from injection to recirculation starts at a RWST level of 23.4% (13.05 ft above tank bottom). There is some margin available in the design calculations during switchover from injection to recirculation, and this water is thus immediately available for re-injection if needed.

B. Alternate sources to inject into the Reactor Coolant System

The re-filled RWST will serve as the primary source of inventory to inject into the RCS. The following sources are listed as potential alternate sources of makeup to the RCS:

- Volume Control Tank
- Boric Acid Tank

The EOPs will be revised to reference the SAMGs for use of these water sources. These alternate sources are consistent with those listed in SAMG-SAG-003 and generally consistent with those listed in EOP-EPP-012. The SAMG identifies the valves that must be manipulated, but does not provide a step-by-step description of the required actions. Instruction for operating the system under accident conditions is not provided since the exact configuration would be event dependent.

In the case where sump flow reduction measures have not completely eliminated sump screen blockage concerns, HNP has determined that it is appropriate to instruct the TSC staff to consider additional RCS injection source possibilities. The following guidance will be implemented:

- The first choice would be to realign a CSIP to the RWST and inject at a rate that exceeds the predicted flow rate required to match the decay heat boil-off rate, or at least 200 gpm if the predicted flow rate is lower than that.
- If the RWST is not available, or if its inventory is nearing low level limits, consider aligning a CSIP to the volume control tank or boric acid tank and use the normal charging flow path.

Planned Actions to Address Compensatory Measure 3

- Action 1: Revise applicable EOPs and conduct training. This activity is scheduled to be complete by 31 December 2003 and is the same activity as Planned Action 2 for Compensatory Measure 1.

Basis for actions not complete by 8 August 2003:
Actions to revise procedures and conduct training will take longer than the sixty-day response window because the procedure revisions must undergo thorough technical and 10 CFR 50.59 reviews and all of the operators must cycle through the training.

Compensatory Measure 4: More Aggressive Containment Cleaning and Increased Foreign Material Controls

In May 2003, HNP Engineering personnel walked down containment prior to containment close-out following refueling. These personnel were aware of the pending bulletin and the concern regarding potential clogging of the containment recirculation sumps. This walkdown resulted in a punch list of items needing further cleaning; all items were completed satisfactorily. Note that this walkdown was conducted in addition to the normal surveillance procedure that documents walkdowns for containment cleanliness and readiness for mode ascension.

HNP has revised the surveillance procedure for containment closeout following refueling and the procedure for containment entries to provide more specific guidance on containment cleanliness and to implement the plant's more stringent criteria for containment cleanliness.

HNP will revise the procedure for pre-job briefs to provide more specific guidance on containment cleanliness and to implement the plant's more stringent criteria for containment cleanliness.

HNP will conduct training for maintenance, maintenance shared resources, and selected contractor personnel. This training will focus on the need to maintain containment cleanliness.

In January 2001, plant personnel removed 1.76 pounds of debris from containment. This debris was located in the curbed area around the recirculation sumps, on top of the recirculation sump structures, and on higher elevations above the sump structures. This debris consisted mainly of dust, paint chips, grinding dust, and small metallic particles; no concrete particles were noted.

In October 2001, HNP performed robotic visual inspection of each low head safety injection and containment spray suction line from the recirculation sump to the immediate vicinity of the pump suction. Some debris was found and removed. The as-left inspections noted that "no evidence of debris or foreign material was seen" in each case. These inspections were documented on videotape and written up in NDE reports.

Completed Actions to Address Compensatory Measure 4:

- Action 1: Completed NEI 02-01 Walkdowns during spring of 2003
- Action 2: Removed debris in containment during 2001, 2002 and 2003
- Action 3: Revised procedure for containment entries
- Action 4: Completed robotic inspections of suction lines for ECCS and CSS
- Action 5: Revised surveillance procedure for containment closeouts

Planned Actions to Address Compensatory Measure 4:

- Action 1: Revise procedure for pre-job briefs. This is scheduled to be complete by 24 June 2004.
- Action 2: Provide training for maintenance, maintenance shared resources, and selected contractor personnel to focus on the need for an increased level of containment cleanliness. Completion will be prior to the next refueling outage currently scheduled for 16 October 2004.

Basis for actions not complete by 8 August 2003:
The action to revise the pre-job brief procedure will not be complete within the sixty-day response window because this revision is not immediately needed; it will be needed prior to the start of the next refueling outage. The action to conduct training will not be complete within the sixty-day response window because the training will be most effective if it is conducted shortly before the next refueling outage. The next refueling outage is scheduled for fall 2004; therefore, the training module is not needed immediately. The procedures for containment entries and containment closeouts have already been revised.

Compensatory Measure 5: Ensuring Containment Drainage Paths are Unblocked

HNP has reviewed for applicability the five LERs concerning blocked flow paths that are listed in the bulletin. In parallel with this review, HNP has also reviewed its containment configuration to identify potential drainage paths that may become restricted.

HNP has grating for flooring outside the secondary shield wall inside containment. The operating floor is concrete up to the outer radius of the secondary shield wall and is grating elsewhere. Grating is also above each of the three Reactor Coolant Pumps on the operating floor. This grating in containment has an 80% free area to ensure spray coverage beneath the operating level; the grating also prevents debris from reaching the recirculation sumps. Because of the large area of grating, holdup of water on the flooring is prevented. HNP has identified one exception. The floor of the seal table room is approximately two feet below the adjacent grating and could hold up a small quantity of water if the floor drain does not drain the water into the incore sump. The path for water to enter the seal table room is by seeping around a plug in the overhead connecting this room to the operating floor above. HNP considers this to be of minimal risk because water will not pool to any appreciable depth on the operating floor and because the water must seep around this plug. HNP plans to verify that the floor drain in the seal table room is unobstructed. Additionally, a preventive maintenance (PM) route has been established to verify that the floor drain in the seal table room is unobstructed during each refueling outage. The majority of drains in containment were flushed to the incore sump during the most recent refueling outage (spring 2003).

The refueling cavity drain terminates in a gate valve that is procedurally required to be locked open prior to concluding a refueling outage. Design documents were reviewed to validate that there are no components downstream of this gate valve. Thus, there is adequate drainage of the refueling cavity.

The secondary shield wall has twenty scuppers and three wire-mesh doors through which water must pass to reach the recirculation sumps. The twenty scuppers are distributed over approximately 240 degrees of arc. Each scupper is 18 inches tall by 18 inches wide and has a metal bar approximately 4 inches wide bolted across the inner surface of the wall to preclude personnel access. Each wire-mesh door terminates approximately ten inches above the floor. These openings present a diverse means for water inside the secondary shield wall to flow outward to the recirculation sumps. The metal bars do present a barrier to large pieces of debris. During the most recent refueling outage, the scuppers were verified not to be blocked by equipment or storage devices.

HNP has revised the surveillance procedure for containment closeout following a refueling outage to ensure that the scuppers are not blocked by equipment and that the wire-mesh doors are not obstructed.

Plant calculations presently consider the volume of the reactor cavity as being unavailable for recirculation because the cavity is below the elevation of the floor.

Each recirculation sump has one piece of scaffolding in its vicinity. The scaffolding was evaluated in an approved engineering evaluation as being acceptable because this scaffolding was assembled using approved procedures which ensures scaffolding is constructed to seismic standards. This scaffolding is secured in multiple directions such that it is extremely rigid and immobile. Moreover, the walk boards of the scaffolding are removed to allow containment spray flow to work effectively. Therefore, this scaffolding does not present a concern to the recirculation sumps.

Completed Actions to Address Compensatory Measure 5:

- Action 1: Verified that significant amounts of recirculation water will not be held up from returning to recirculation sump.
- Action 2: Flushed majority of containment building drains to incore sump during RFO-11.
- Action 3: Verified that the twenty scuppers and three wire-mesh doors in the secondary shield wall through which water must pass to reach the recirculation sumps are unobstructed.
- Action 4: Developed PM route 98907 for verifying floor drains are not obstructed.
- Action 5: Revised the surveillance procedure for containment closeout to ensure the scuppers are not blocked by equipment and that the wire-mesh doors are not obstructed.

Planned Actions to Address Compensatory Measure 5:

- Action 1: Validate that the floor drain in the seal table room drains properly to the incore sump. The scheduled completion date is 20 November 2003.

Basis for actions not complete by 8 August 2003:
As mentioned above, there is minimal risk involved with the floor drain in the seal table room. Validation that it will properly drain must be done during a containment entry. The schedule allows planning to minimize dose associated with this activity and will allow the activity to occur during a scheduled or emergent containment entry rather than a special entry for this purpose alone.

Compensatory Measure 6: Ensuring Sump Screens are Free of Adverse Gaps and Breaches

In May 2003, the recirculation sumps were inspected in accordance with an approved surveillance procedure; no adverse gaps or breaches were noted. In parallel with this procedural inspection, each of these twelve screens was inspected in May 2003 by engineering personnel; again, no adverse gaps or breaches were noted.

The containment recirculation sump screens were inspected in January 2001, and the results of this inspection are contained in an approved engineering evaluation. The evaluation noted no flow paths that could allow debris to bypass the sump screens and also noted that the workmanship of the sump screens was "quite good".

HNP has revised the surveillance procedure for the visual inspection of the sumps to include criteria for gaps and breaches in the sump screens.

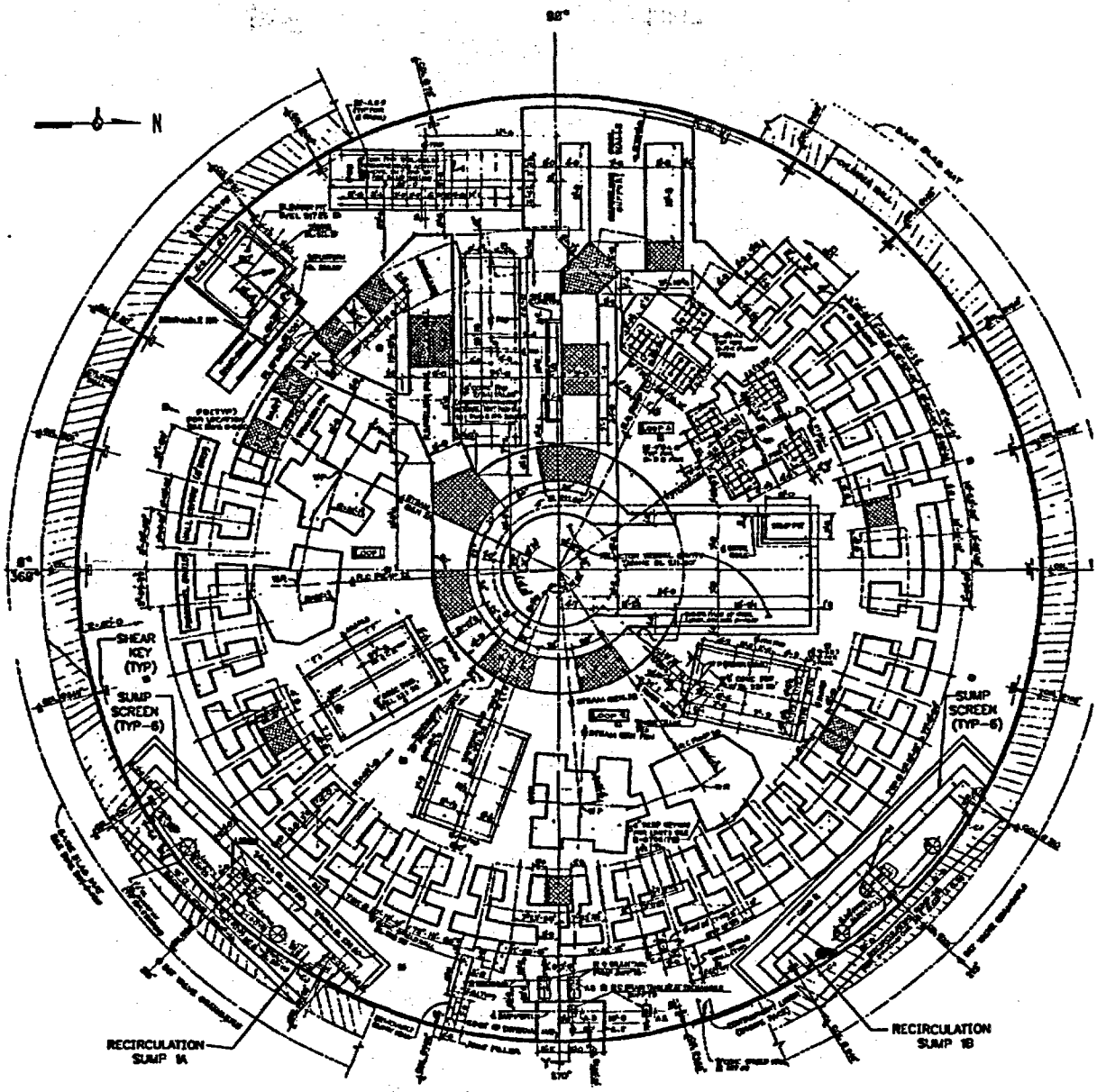
Completed Actions to Address Compensatory Measure 6:

- Action 1: Verified that sump screens are free of gaps and voids greater than $^1/_8$" diameter during spring of 2003.
- Action 2: Revised the surveillance procedure for the visual inspection of the sumps to document that gaps and voids do not exist between the sump screens and the sump structure that would allow debris larger than that which could pass through the sump screens to bypass the sump screens.

Planned Actions to Address Compensatory Measure 6:

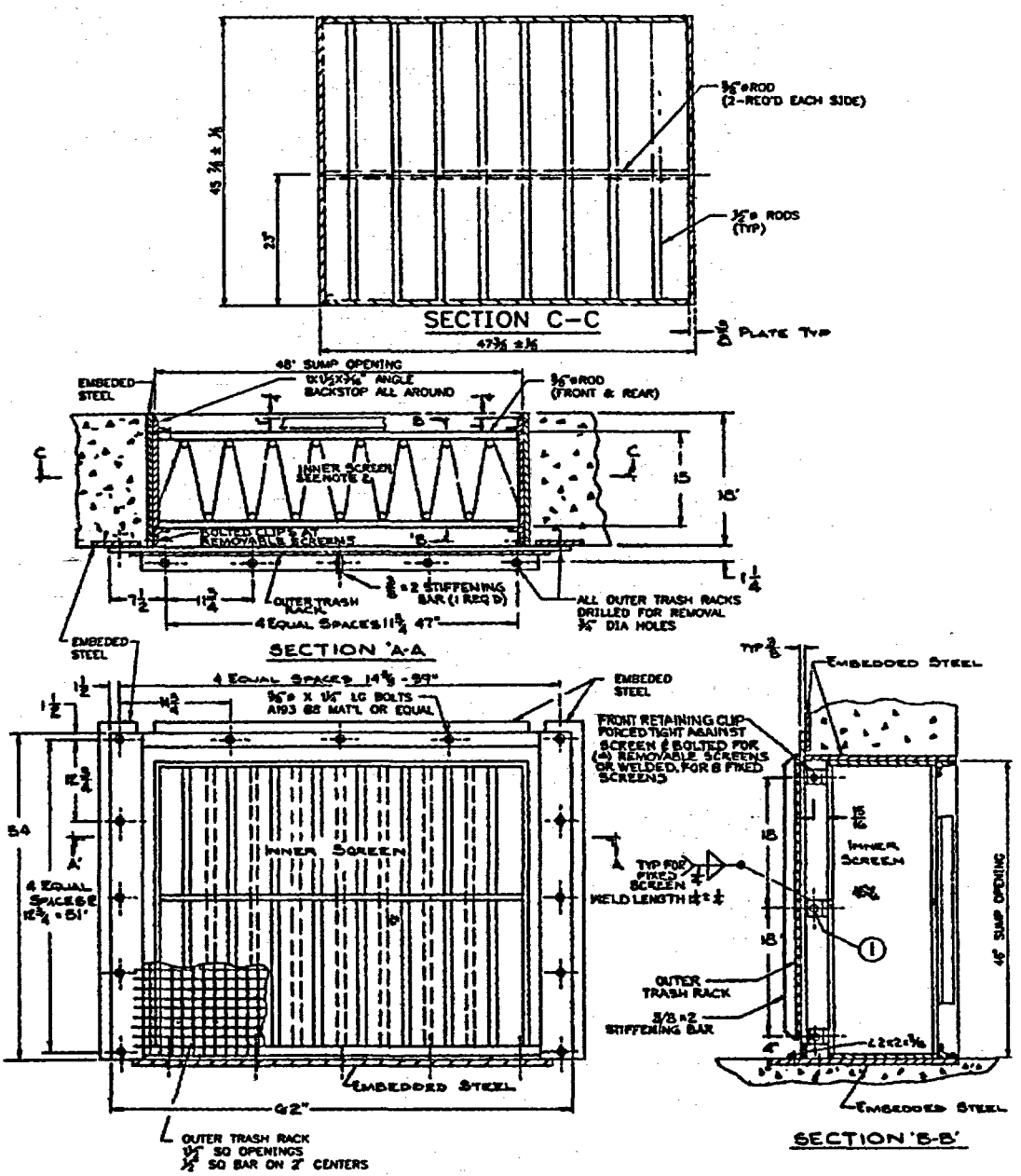
- None

Attachment 2 to Letter HNP-03-080
Design Layout and Details of the HNP Containment Recirculation Sumps

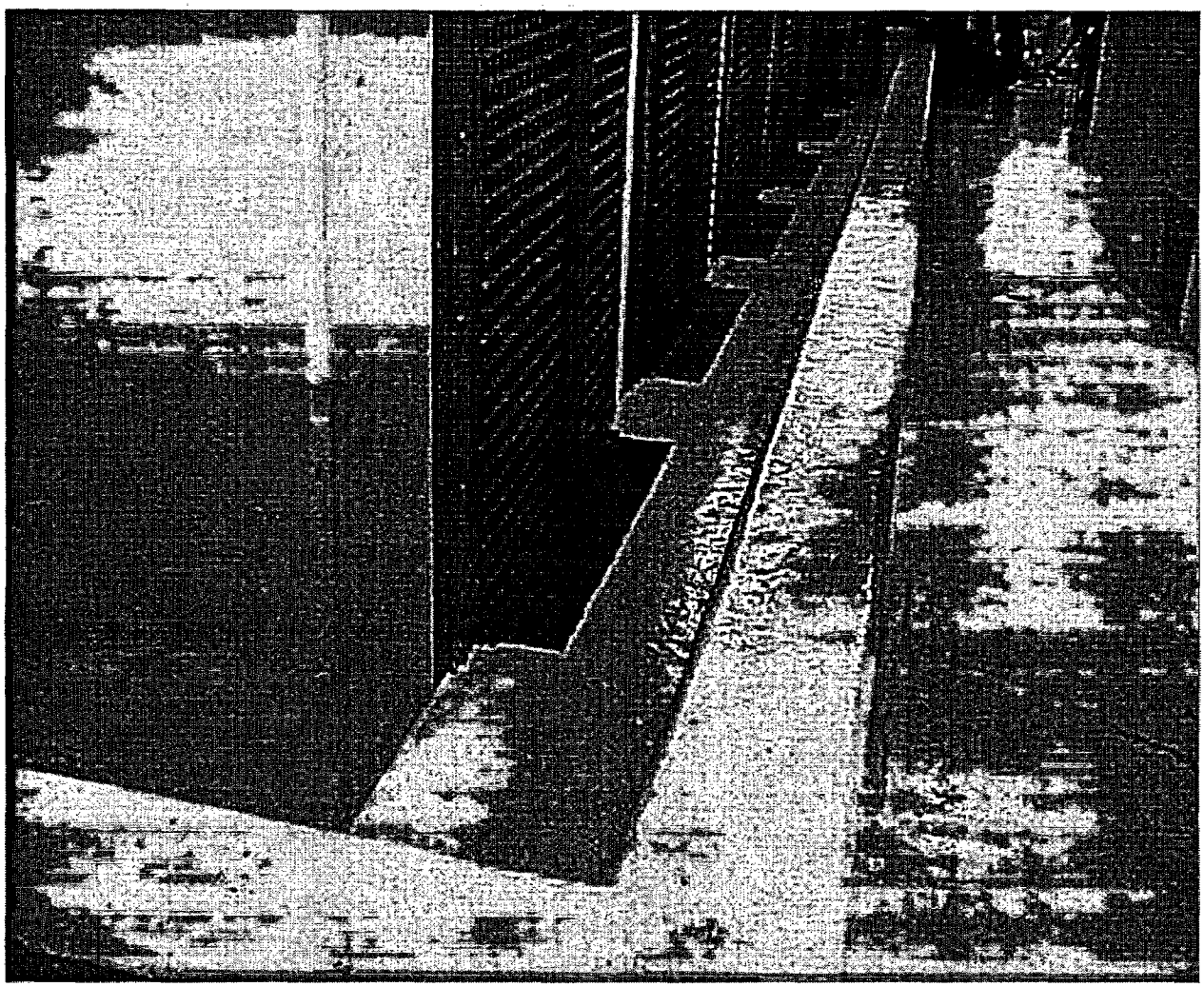


REACTOR CONTAINMENT BUILDING
INTERNAL MAT
PLAN @ EL 221.00'

Attachment 2 to Letter HNP-03-080
Design Layout and Details of the HNP Containment Recirculation Sumps



REACTOR CONTAINMENT BUILDING
RECIRCULATION SUMP SCREENS



Attachment 3 to Letter HNP-03-080
Commitments

The actions committed to by Progress Energy Carolinas, Inc. in this document are identified below. Any other actions discussed in this submittal represent intended or planned actions by Progress Energy Carolinas, Inc. They are described for the NRC's information and are not regulatory commitments.

Commitments	Scheduled Completion Dates
Provide initial session of operator training for licensed operators and licensed operator trainees on indications of sump blockage.	30 September 2003
Revise EOPs and provide detailed training on indications of sump blockage and potential mitigating actions to operators in LOCT and to the Technical Analysis Director, AAT-Mechanical, and AAT-Core Performance personnel in the TSC.	31 December 2003
Provide training for maintenance, maintenance shared resources, and selected contractor personnel to focus on the need for an increased level of containment cleanliness.	16 October 2004