



Duke Power
Catawba Nuclear Station
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April 3, 2007

U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555-0001

SUBJECT: Duke Power Company LLC d/b/a Duke Energy Carolinas, LLC
Catawba Nuclear Station, Unit 1 and Unit 2
Docket Nos.: 50-413 and 50-414
2006 10 CFR 50.59 Summary Report

Attached please find a report containing a brief description of changes, test, and experiments, including a summary of the safety evaluation for each, for Catawba Nuclear Station, Units 1 and 2 for the year 2006. This report is submitted pursuant the provisions of 10 CFR 50.59(d)(2) and 10 CFR 50.4.

Questions regarding this report should be directed to Kay Nicholson at 803.831.3237.

Sincerely,

JW Putesa for

J. R. Morris

Attachments

IE47

Nuclear Regulatory Commission

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Type: Design Change

Unit: 1.

Title: CD 100105 - Swap 1A & 1B VG aftercooler water from RN to YD/YM

Description: This evaluation was performed to implement engineering changes to replace the Nuclear Service Water (RN) cooling water supply to the Emergency Diesel Generator Starting Air (VG) aftercoolers with cooling water from the Drinking Water System (YD). Demineralized Water (YM) will serve as a backup water cooling source. This engineering change is necessary because the continuous RN flow to the VG aftercoolers of approximately 16 gpm per train promotes tubular growth and other degradation of the RN pipe.

Evaluation: No Technical Specification changes are required. UFSAR changes are needed to Table 3.4 and 9.3, and Sections 9.2.1.2.3, 9.2.3.2, 9.2.4.2.2, 9.5.6.2.2, 9.5.6.3, 18.2.12.5, and 18.2.24 to document these design changes to the VG, RN, and YD/YM systems.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary for implementation of engineering change CD100105.

Type: Design Change

Unit: 1

Title: CD 100697A - Place bypass lines inservice that were installed by design change CD 100697

Description: This evaluation was performed to determine whether the bypass lines installed under CD 100697 may be unisolated and placed in service under the provisions of 10 CFR 50.59 without prior NRC approval. Engineering change CD 100697 installed a ¾ inch pressure controlling bypass line in parallel with 1FW-28 (1A ND pump suction from FWST check) and 1FW-56 (1B ND pump suction from FWST check). These are the Residual Heat Removal (ND) train A and B train pump suction valves from the Refueling Water Storage Tank (FWST), respectively. The purpose of the bypass line is to allow pressure trapped in the ND pump suction to relieve to the FWST when the ND system is in ECCS injection alignment for the spectrum of SBLOCAs that do not result in ND injection into the Reactor Coolant (NC) system.

Evaluation: No Technical Specification changes are required. UFSAR changes are required to Table 5-31 and Table 6-77.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary to allow implementation of CD 100697A to place the bypass lines inservice that were installed by Engineering Change CD 100697.

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Type: Design Change

Unit: 1

Title: CD 101038 - Broadband over power lines (BPL) test inside unit 1 lower containment during IEOC16

Description: This evaluation was performed to install the necessary network equipment in lower containment to allow communication into and out of containment during an upcoming refueling outage on unit 1. This involves using a Mitsubishi power-line AW series network and an inductive couple to inject our LAN data signal into the load-side power cable in motor control center 1MXN. The signal will be needed in containment in the areas of lighting panel boards 1LR5 and 1LR6. The signal will be sent to the electrical receptacles which are fed from these panel boards. LAN data can then be received at these receptacles which will allow video and telephone communications via the signal from the power outlets. The installation of the network devices have shown no adverse affect on any equipment installed in the plant because the signal generated meets the radiated and conducted emissions requirements of EPRI Technical Report (TR-102323), Revision 3.

Evaluation: No Technical Specification changes are required. No UFSAR changes are needed to implement this temporary design change.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary to allow video and telephone communications via electrical receptacles in unit 1 containment during IEOC16.

Type: Design Change

Unit: 2

Title: CD 200107 - Swap 2A & 2B VG aftercooler water from RN to YD/YM

Description: This evaluation was performed to implement engineering changes to replace the Nuclear Service Water (RN) cooling water supply to the Emergency Diesel Generator Starting Air (VG) aftercoolers with cooling water from the Drinking Water System (YD). Demineralized Water (YM) will serve as a backup water cooling source. This engineering change is necessary because the continuous RN flow to the VG aftercoolers of approximately 16 gpm per train promotes tubular growth and other degradation of the RN pipe.

Evaluation: No Technical Specification changes are required. UFSAR changes are needed to Table 3.4 and 9.3, and Sections 9.2.1.2.3, 9.2.3.2, 9.2.4.2.2, 9.5.6.2.2, 9.5.6.3, 18.2.12.5, and 18.2.24 to document these design changes to the VG, RN, and YD/YM systems.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary for implementation of engineering change CD200107.

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Type: Design Change

Unit: 2

Title: CD 200750 - Broadband over power lines (BPL) test inside unit 2 lower containment during 2EOC14

Description: This evaluation was performed to install the necessary network equipment in lower containment to allow communication into and out of containment during an upcoming refueling outage on unit 2. This involves using a Mitsubishi power-line AW series network and an inductive couple to inject our LAN data signal into the load-side power cable in motor control center 2MXN. The signal will be needed in containment in the areas of lighting panel boards 2LR5 and 2LR6. The signal will be sent to the electrical receptacles which are fed from these panel boards. LAN data can then be received at these receptacles, which will allow video and telephone communications via the signal from the power outlets. The installation of the network devices have shown no adverse affect on any equipment installed in the plant because the signal generated meets the radiated and conducted emissions requirements of EPRI Technical Report (TR-102323), Revision 3.

Evaluation: No Technical Specification changes are required. No UFSAR changes are needed to implement this temporary design change.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary to allow video and telephone communications via electrical receptacles in unit 2 containment during 2EOC14

Type: Design Change

Unit: 2

Title: CD 201120 - Place bypass lines inservice that were installed by engineering change CD 200611

Description: This evaluation was performed to determine whether the bypass lines installed under CD 200611 may be unisolated and placed in service under the provisions of 10 CFR 50.59 without prior NRC approval. Engineering change CD 200611 installed a ¾ inch pressure controlling bypass line in parallel with 2FW-28 (2A ND pump suction from FWST check) and 2FW-56 (2B ND pump suction from FWST check). These are the Residual Heat Removal (ND) train A and B train pump suction valves from the Refueling Water Storage Tank (FWST), respectively. The purpose of the bypass line is to allow pressure trapped in the ND pump suction to relieve to the FWST when the ND system is in ECCS injection alignment for the spectrum of SBLOCAs that do not result in ND injection into the Reactor Coolant (NC) system.

Evaluation: No Technical Specification changes are required. UFSAR changes are required to Table 5-31 and Table 6-77.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary to allow implementation of CD 201120 to place the bypass lines inservice that were installed by Engineering Change CD 200611.

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Type: Miscellaneous Item

Unit: 1

Title: Compensatory action and EP/AP procedure changes associated with PIP C05-2259

Description: This evaluation was performed to evaluate compensatory actions originally associated with an operability evaluation to address the effect of ND pressure trapped in the ND pump suction following pump operation on the ability of the containment sump suction valves to open. Subsequently, it was determined that an actual evaluation would be the more prudent tool to determine the status of the compensatory action. This evaluation is to document that NRC approval was not required to implement the compensatory action to vent the Unit 1 residual heat removal (ND) suction on a SBLOCA. The compensatory actions that were evaluated were officially in effect from 05/06/2005 to 05/07/2005, which were established to depressurize the ND pump suction after securing the pumps during mitigation of a SBLOCA. The criteria for securing the pumps currently prescribed in the emergency operating procedures was not revised.

Evaluation: No Technical Specification changes are required. No UFSAR changes are needed to implement this compensatory action.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval was necessary to allow implementation of the compensatory action.

Type: Miscellaneous Item

Unit: 0

Title: Revision to Technical Specification Bases 3.6.13

Description: This evaluation was performed to evaluate changes to the Technical Specification Bases (TSB) 3.6.13, Ice Condenser Doors for Catawba Nuclear Station. The change revises the discussion for the Surveillance Requirement (SR) 3.6.13.6. The purpose of the change is to enhance the discussion regarding the current licensing basis for this surveillance. The change is also intended to resolve questions regarding the physical significance of the calculated negative frictional values. As a result of this change, Section 6.7.8.3 of the UFSAR will be updated to include a brief discussion of surveillance testing performed on the lower inlet doors (LID). A note regarding sensitivity studies of deck bypass leakage to change in LID performance will be added to UFSAR Table 6-12. Additional reference will be added to UFSAR Section 6.7.20.

Evaluation: No Technical Specification changes are required. Changes to UFSAR Section 6.7.8.3, Table 6.12, and Section 6.7.20 changes are needed to implement this changes.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval was necessary to change Technical Specification Bases 3.6.13, Ice Condenser Doors.

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Type: Miscellaneous Item

Unit: 1

Title: Unit 1 cycle 17 core reload design

Description: This evaluation was performed to install the core designed for Catawba Nuclear Station, Unit 1 cycle of operation number 17 (C1C17). The C1C17 Reload Design Safety Analysis Review (REDSAR), performed in accordance with Nuclear Engineering Division procedure NE-102, "Workplace Procedure for Nuclear Fuel Management," and the C1C17 Reload Safety Evaluation (Duke Energy design calculation CNC-1552.08-0382, Revision 0) confirm that the UFSAR Chapter 15 accident analyses remain bounding with respect to the C1C17 safety analysis reactor physics parameters. The safety analysis reactor physics method is described in topical report DPC-NE-03001-PA. The C1C17 core reload is similar to past cycle core designs, with a design generated using NRC approved methods. The C1C17 Core Operating Limits Report (COLR) is prepared in accordance with Technical Specification 5.6.5.

Evaluation: No Technical Specifications changes are needed. No UFSAR changes are required for C1C17.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary for operation of the C1C17 core design.

Type: Miscellaneous Item

Unit: 2

Title: Unit 2 cycle 15 core reload

Description: This evaluation was performed to install the core designed for Catawba Nuclear Station, Unit 2 cycle of operation number 15 (C2C15). The C2C15 Reload Design Safety Analysis Review (REDSAR), performed in accordance with Nuclear Engineering Division procedure NE-102, "Workplace Procedure for Nuclear Fuel Management," Revision 18, and the C2C15 Reload Safety Evaluation (Duke Energy design calculation CNC-1552.08-0379, Revision 2) confirm that the UFSAR accident analyses remain bounding with respect to the predicted C2C15 physics parameters and fuel thermal and mechanical performance limits. The C2C15 Core Operating Limits Report (COLR) was prepared in accordance with Technical Specification 5.6.5.

Evaluation: No Technical Specifications changes are required. No UFSAR changes are needed.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary for operation of the C2C15 core design.

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Type: Nuclear Station Modification

Unit: 1

Title: CD 100736 - Disable fast acting solenoid valve for main turbine control valve #2

Description: This evaluation was performed for a temporary modification that will disable the fast acting solenoid valve (FASV) for main turbine control valve #2 by removing the plug-in relay used to energize the FASV. This modification is necessary due to a failure of control valve #2 to fast close during recent control valve movement testing. Engineering has determined that the failure of the valve to fast close is either due to a problem with the FASV or a failure of the relay that energizes the FASV. It is possible that a problem with the FASV could potentially cause the FASV to bind and not return back to its original position which would prevent control valve #2 from re-opening. The unit would then have to be shutdown to repair the FASV. Therefore, it is desirable to disable the fast-acting function of control valve #2. It should be noted that after implementation of this design change, the turbine control system and control valve #2 will continue to function as designed. This change will only affect the ability of control valve #2 to fast close via the FASV. All other functions of the turbine control system and control valve #2 will operate as originally designed. This modification is only expected to be in place until the next refueling outage.

Evaluation: No Technical Specification changes are needed. No UFSAR changes are required to implement this temporary modification.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary to disable the fast acting solenoid valve for main turbine control valve #2.

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Type: Nuclear Station Modification

Unit: 1

Title: NSM 11440 - Replace particulate detectors 1EMF-35 and 1EMF-38 and delete iodine detectors 1EMF-37 and 1EMF-40

Description: This evaluation was performed to replace the moving filter low range detectors (EMF-35L and EMF-38L) with fixed filter particulate detectors, to delete particulate detector high range detectors (EMF-35H and EMF-38H), and to delete the iodine continuous monitors (EMF-37 and EMF-40). The iodine monitors are being deleted because of equipment aging and obsolescence. The fixed filter particulate monitors are single range units, equivalent to the existing low range channels. Therefore, the high range portions of the particulate monitors are being eliminated. The low range particulate monitors are also being replaced because of equipment aging and obsolescence. Accordingly, the appropriate procedures will be revised or deleted, and the applicable sections of the UFSAR will be revised.

The proposed activity is the replacement of the Unit Vent (EMF-35) and Containment Atmosphere (EMF-38) low range, moving-filter particulate monitors, with a fixed filter radiation monitor. No changes to existing control functions are being proposed. The radiosensitivity of the fixed filter monitor is as good as or better than the existing moving filter paper monitor.

The proposed activity also deletes the high-range particulate monitors. These monitors have no control functions and are not required for plant operations.

The proposed activity also includes removal of the unit vent (EMF-37) and containment atmosphere (EMF-40) iodine monitors, including the associated control functions. A thorough review of design and licensing bases has been performed and identified no requirements that would prohibit the deletion of these components and functions

Evaluation: No Technical Specification changes are required. UFSAR changes are required to the appropriate sections to remove references to the iodine monitors (unit vent and containment atmosphere), to remove references to the particulate monitor high range channels (unit vent and containment atmosphere), and revise references from moving filter paper to fixed filter paper on the particulate monitor (unit vent and containment atmosphere).

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary to allow implementation of NSM 11440 to replace particulate detectors (EMF-35 and EMF-38) and delete iodine detectors (EMF-37 and EMF-40).

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Type: Nuclear Station Modification

Unit: 2

Title: NSM 21440 -Replace particulate detectors 2EMF-35 and 2EMF-38 and delete iodine detectors 2EMF-37 and 2EMF-40

Description: This evaluation was performed to replace the moving filter low range detectors (EMF-35L and EMF-38L) with fixed filter particulate detectors, to delete particulate detector high range detectors (EMF-35H and EMF-38H), and to delete the iodine continuous monitors (EMF-37 and EMF-40). The iodine monitors are being deleted because of equipment aging and obsolescence. The fixed filter particulate monitors are single range units, equivalent to the existing low range channels. Therefore, the high range portions of the particulate monitors are being eliminated. The low range particulate monitors are also being replaced because of equipment aging and obsolescence. Accordingly, the appropriate procedures will be revised or deleted, and the applicable sections of the UFSAR will be revised.

The proposed activity is the replacement of the Unit Vent (EMF-35) and Containment Atmosphere (EMF-38) low range, moving-filter particulate monitors, with a fixed filter radiation monitor. No changes to existing control functions are being proposed. The radiosensitivity of the fixed filter monitor is as good as or better than the existing moving filter paper monitor.

The proposed activity also deletes the high-range particulate monitors. These monitors have no control functions and are not required for plant operations.

The proposed activity also includes removal of the unit vent (EMF-37) and containment atmosphere (EMF-40) iodine monitors, including the associated control functions. A thorough review of design and licensing bases has been performed and identified no requirements that would prohibit the deletion of these components and functions

Evaluation: No Technical Specification changes are required. UFSAR changes are required to the appropriate sections to remove references to the iodine monitors (unit vent and containment atmosphere), to remove references to the particulate monitor high range channels (unit vent and containment atmosphere), and revise references from moving filter paper to fixed filter paper on the particulate monitor (unit vent and containment atmosphere).

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary to allow implementation of NSM 21440 to replace particulate detectors (EMF-35 and EMF-38) and delete iodine detectors (EMF-37 and EMF-40).

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Type: Nuclear Station Modification

Unit: 1

Title: NSM CN-11407 - Install leak-off line in containment for each residual heat removal (ND) line

Description: NSM CN-11407 will install a manual vent line, capable of being placed in a continuous venting mode, on the residual heat removal (ND) discharge headers in containment. The purpose of the vent lines is to maintain the pressure upstream of the secondary safety injection (SI) check valves as low as possible in order to maintain high seating forces (d/p) on the secondary pressure boundary SI check valves. In addition, the vent lines have a secondary function of continuous removal of non-condensable gases that may come out of solution in the lower pressure ND header. Vent lines will be added to the A train and B train headers as shown on flow diagram CN01562-1.3 as modified per CN-114070.

Evaluation: No Technical Specification changes are required. No UFSAR changes are needed to implement this nuclear station modification.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary to install leak-off line in containment for each ND line.

Type: Procedure change

Unit: 1

Title: Adding enclosure 4.9, Abnormal Air Release Mode, to OP/1/A/6450/17, Revision 58

Description: This evaluation was performed to add Enclosure 4.9, Abnormal Air Release Mode, to OP/1/A/6450/17. During normal plant operation, corrective maintenance activities or unexpected equipment or component failures may result in the inability to reduce containment pressure through the normal containment air release and addition (VQ) system air release path. For these abnormal situations, an alternate air release method may be necessary to remain with the Technical Specification 3.6.4 containment pressure limits. This evaluation will determine if releasing air through the VQ system air addition path is acceptable during abnormal situations.

Evaluation: No Technical Specification changes are required. No UFSAR changes are needed to implement this procedure change.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary to allow air to be released through the VQ system air addition path during abnormal situations.

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Type: Procedure change

Unit: 2

Title: Adding enclosure 4.9, Abnormal Air Release Mode, to OP/2/A/6450/17, Revision 51

Description: This evaluation was performed to add Enclosure 4.9, Abnormal Air Release Mode, to OP/2/A/6450/17. During normal plant operation, corrective maintenance activities or unexpected equipment or component failures may result in the inability to reduce containment pressure through the normal containment air release and addition (VQ) system air release path. For these abnormal situations, an alternate air release method may be necessary to remain with the Technical Specification 3.6.4 containment pressure limits. This evaluation will determine if releasing air through the VQ system air addition path is acceptable during abnormal situations.

Evaluation: No Technical Specification changes are required. No UFSAR changes are needed to implement this procedure change.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary to allow air to be released through the VQ system air addition path during abnormal situations.

Type: Procedure Change

Unit: 0

Title: AP/0/A/5500/045 - Revised Evaluation for Plant Fire, Revision 0

Description: This evaluation was performed to create a new procedure for partial transfer to the Standby Shutdown Facility (SFF) control when an active fire is detected in areas that credit the SSF for safe shutdown capability. This partial transfer to SSF control shall be initiated when an active fire is detected in said area. This partial transfer to the SSF is done by placing EMXS on its alternate power. Complete swapping to the SSF would then be directed by AP/1(2)/A/5500/17, Loss of Control Room. This new procedure would direct operators to close the suction valve of the train related Residual Heat Removal (ND) pump from the Refueling Water Storage Tank (FWST) to prevent loss of the FWST inventory from spurious opening of the train associated containment sump isolation valve. This evaluation is a revision to an evaluation which was originally prepared on October 24, 2005.

Evaluation: This evaluation concluded that no changes to Technical Specifications or the UFSAR are required as a result of this evaluation.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary to implement AP/0/A/5500/045, Plant Fire, Revision 0.

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Type: UFSAR Change

Unit: 2

Title: Revise unit 2 RTD response time criteria

Description: The evaluation was performed to revise the Maximum Time Response for the narrow range RTDs to the Reactor Coolant (NC) system for Catawba Unit 2. The results of an engineering evaluation performed by Safety Analysis concluded that an increase in the RTD response time to less than or equal to 8.0 seconds to be acceptable for Catawba Unit 2 as long as the OT delta T and OP delta T tau3 and tau6 values remain at their current values of 0.0 seconds.

Evaluation: No Technical Specification changes are required. UFSAR changes are needed to Table 7-3 which lists the Maximum Response Time for the narrow range RTDs for the NC system. The maximum allowable response time will be increased from 6.5 to 8.0 seconds.

This 10 CFR 50.59 evaluation concluded that no prior NRC approval is necessary to increase the maximum allowable response time for the Catawba Unit 2 RTDs.