

February 16, 2005

LICENSEE: Duke Energy Corporation

FACILITY: Catawba Nuclear Station, Units 1 and 2

SUBJECT: SUMMARY - MEETING WITH DUKE ENERGY CORPORATION ON THE
NUCLEAR SERVICE WATER ALLOWED OUTAGE TIME AMENDMENT
REQUEST FOR CATAWBA NUCLEAR STATION (TAC NOS. MC5117 AND
MC5118)

Representatives of Duke Energy Corporation (DEC, the licensee), met with members of the Nuclear Regulatory Commission (NRC) staff at NRC Headquarters on January 31, 2005, in Rockville, Maryland. The meeting addressed issues related to the licensee's application dated November 16, 2004 (Reference 1), for Catawba Nuclear Station, Units 1 and 2. In its application, the licensee requested approval of amendments to allow a one time outage of 14 days for the Nuclear Service Water System (NSWS) Headers for each unit at Catawba. A list of attendees is provided in Attachment 1 and the handouts provided in the meeting are included in Attachment 2.

BACKGROUND

Because of changes in Lake Wylie since the construction of Catawba, DEC tracked a gradual decrease in water quality from the lake. Because of these changes, on October 4, 2000, the NRC issued a TS amendment for Catawba to temporarily revise several TS sections to allow those systems to be inoperable for up to 12 days to allow for NSWS upgrades. This upgrade project included the cleaning, replacement, and testing of segments of the NSWS piping. The cleaning process removed corrosion products, silt, sediment, and biological agents from the inside diameter of the pipe. This cleaning also allowed for an internal inspection of the piping.

Based on the results of these inspections, the licensee removed a 20 foot section of NSWS piping for further inspection during a 7 day allowed outage time (AOT). Based on the corrosion detected, DEC determined that the welds in the NSWS should be restored prior to the Spring 2008 outage. To tackle this task, DEC developed a three phased NSWS Improvement Plan. The initial phase of the plan targets the stabilization of the welds in the NSWS supply headers. The second phase would implement a series of modifications and system enhancements to restore the system to its original design and provide operational flexibility to allow for system maintenance. The final phase of the plan would include the coating and any necessary repairs of the NSWS supply headers. The licensee is also planning the possible expansion of the final phase to include repairs on the lake and Standby Nuclear Service Water Pond return lines as needed.

Therefore, to provide the time necessary to implement the first phase of this plan, by letter dated November 16, 2004, the licensee requested approval of amendments to allow a one time outage of 14 days for the NSWS Headers for each unit at Catawba. In order to facilitate the review of this application, the licensee requested a meeting with the NRC to present its

application. The NRC held this meeting on January 31, 2005, at NRC Headquarters in Rockville, Maryland.

SUMMARY OF MEETING

Duke's presentation utilized the enclosed handout entitled, "Catawba Nuclear Station Nuclear Service Water System Technical Specification Extension Request." The meeting began with a brief overview of the raw water issues at the plant, followed by a detailed presentation on the Catawba NSWS. Basically, the NSWS is a once through system supplied by fresh water from Lake Wylie that has redundant A and B supply headers that are shared by both units. The NSW Pond supplies the ultimate heat sink for the system.

To counteract the corrosion issues, the licensee replaced portions of the NSW to Auxiliary Feedwater system piping, the NSW to control room chilled water system piping, and the containment spray heat exchangers. Furthermore, DEC completed the first major NSWS cleaning and inspection during a 12 day extended AOT. The licensee also increased the NSWS flow rate and added chemicals to the water in order to minimize the siltation and sedimentation in the NSWS piping. Additionally, during a 7 day AOT, DEC replaced a small section of buried piping for a detailed piping condition analysis.

Using the information gained from this experience, DEC established a Service Water Project (SWP) Team that reports directly to the Catawba Nuclear Station Site Vice President. The SWP Team objective is to restore the service NSWS piping to near the original design conditions and to prevent recurrence of the corrosion and fouling issues. To achieve this objective, the SWP Team developed several strategies. These involved treating the raw water to minimize the fouling and siltation effects; reducing reliance on raw water as a cooling source for selected components; managing aging of the large diameter buried piping; minimizing the amount of piping exposed to service water and minimizing the stagnant or low flow areas; enhancing the NSWS flow to reduce the amount of silt deposition in the system piping and components; ensuring the comprehensive condition assessment of the piping; and replacing the piping as necessary with corrosion resistant materials. The SWP Team also developed implementation strategies that involved maximizing work within already approved AOTs, minimizing AOT extension requests, and minimizing plant risk.

If the TS amendments were approved, DEC plans to implement Phase I of the project in 2005. These plans include stabilizing the NSW supply header welds, installing additional isolation valves to minimize safety system unavailability, coating NSWs intake piping, installing an NSW chlorination/dechlorination system, and completing containment spray heat exchanger replacements.

Phase II, yet to be finalized, would occur between 2006 and 2010. This phase would include replacing portions of the auxiliary building piping, installing an NSW pump house header crossover, installing an NSW auxiliary building header crossover, installing an emergency diesel generator (EDG) supply header crossover, removing selective cooling loads from the NSW, and moving isolation valves to reduce lake water exposure. Finally, the licensee plans to submit a license amendment request for single header operation for the NSWS.

For Phase III, DEC plans to coat and repair the NSWS supply headers as required. It would complete any required actions for the NSWS standby pond discharge and supply headers. It

would replace the EDG cooling supply headers. Additionally, DEC would establish an NSW supply and discharge header long term inspection and maintenance program.

At the conclusion of the presentation, DEC restated that it is seeking approval of the requested amendments by October 1, 2005. These amendments would facilitate the implementation of Phase I of the licensee's plan. However, the NRC staff noted several deficiencies in the application as submitted.

The application should have further discussion on why the NSW piping is seismically qualified given that it is in a "degraded" condition. It also should present the specific actions and plans for severe weather mitigation. Additionally, to better support the NRC's review of the risk impact of the extended NSW AOT, additional information identified in Regulatory Guide (RG) 1.174, "An Approach for Using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to the Licensing Basis," and RG 1.177, "An Approach for Plant-Specific, Risk-Informed Decisionmaking: Technical Specifications," should be provided. The areas of these RGs that should be addressed include:

1. Traditional Engineering Considerations (i.e. Defense in Depth);
2. Baseline Core Damage Frequency, Large Early Release Frequency, Conditional Core Damage Probability (CCDP), and Conditional Large Early Release Probability (CLERP) for the outage configurations (ensure that the calculated risk is clearly identifiable as incurred for each train outage, or as the combined risk impact of both outages);
3. Probabilistic risk assessment (PRA) scope and quality information, including a basis for the PRA model being representative of the as built, as operated plant, unit-specific differences, outstanding plant modifications or performance data not yet incorporated into the PRA models, model truncation levels, and key assumptions and uncertainties relevant to the amendment request;
4. Key plant and/or PRA model changes that have caused the risk calculations (i.e., CCDP) to change compared with the prior amendment requests;
5. Capability of the configuration risk management program;
6. How the additional unavailability incurred during extended NSW outages has been, and will be, addressed by Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50.65 monitoring and performance criteria; and
7. Additional details and sensitivity analyses for specific PRA model features and assumptions identified in the submittal as important to maintaining overall risk during NSW extended outages.

CONCLUSION

At the conclusion of the meeting, DEC indicated that it would consider the information discussed and would submit supplemental information to further aid the review.

No members of the public attended this meeting. There were no public comments.

REFERENCES

1. Letter from Dhiaa Jamil, Site Vice President, Catawba Nuclear Station, Duke Power to NRC, "Proposed Technical Specification Amendment Technical Specification 3.5.2, Emergency Core Cooling System, 3.6.6, Containment Spray System, 3.6.17, Containment Valve Injection Water System, 3.7.5, Auxiliary Feedwater System, 3.7.7, Component Cooling Water System, 3.7.8, Nuclear Service Water System, 3.7.10, Control Room Area Ventilation System, 3.7.12, Auxiliary Building Filtered Ventilation Exhaust System, & 3.8.1, AC Sources - Operating," November 16, 2004.

Sincerely,

/RA/

Sean E. Peters, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

Docket Nos. 50-413 and 50-414

Attachments: 1. Attendance List
2. Meeting presentation materials

cc w/atts: See next page

REFERENCES

1. Letter from Dhiaa Jamil, Site Vice President, Catawba Nuclear Station, Duke Power to NRC, "Proposed Technical Specification Amendment Technical Specification 3.5.2, Emergency Core Cooling System, 3.6.6, Containment Spray System, 3.6.17, Containment Valve Injection Water System, 3.7.5, Auxiliary Feedwater System, 3.7.7, Component Cooling Water System, 3.7.8, Nuclear Service Water System, 3.7.10, Control Room Area Ventilation System, 3.7.12, Auxiliary Building Filtered Ventilation Exhaust System, & 3.8.1, AC Sources - Operating," November 16, 2004.

Sincerely,

/RA/

Sean E. Peters, Project Manager, Section 1
Project Directorate II
Division of Licensing Project Management
Office of Nuclear Reactor Regulation

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Enclosures: 1. Attendance List
2. Meeting presentation materials

cc w/encls: See next page

Distribution: See next page

Package No.: ML052660277

Enclosure 2: ML050180449

ADAMS Accession No.: ML050490187

Enclosure 3: ML050480108

NRC-001

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SUBJECT: MEETING WITH DUKE ENERGY CORPORATION ON THE NUCLEAR SERVICE
WATER ALLOWED OUTAGE TIME AMENDMENT REQUEST FOR CATAWBA
NUCLEAR STATION (TAC NOS. MC5117 AND MC5118)

DATE: February 16, 2005

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