June 22, 2004

Mr. M. Nazar
Senior Vice President and
Chief Nuclear Officer
Nuclear Generation Group
American Electric Power Company
500 Circle Drive
Buchanan, MI 49107

SUBJECT: DONALD C. COOK NUCLEAR POWER PLANT, UNITS 1 AND 2
NRC LICENSE RENEWAL SCOPING/SCREENING INSPECTION
REPORT 05000315/2004003(DRS); 05000316/2004003(DRS)

Dear Mr. Nazar:

On May 21, 2004, the NRC completed an inspection regarding the application for license renewal for the D. C Cook Nuclear Plant. The enclosed report documents the inspection results, which were discussed with members of your staff.

The purpose of this inspection was an examination of activities that support the application for a renewed license for D. C. Cook. The inspection consisted of a selected examination of procedures and representative records, and interviews with personnel regarding the process of scoping and screening plant equipment to select equipment subject to an aging management review.

The inspection concluded that the scoping and screening portion of license renewal activities was conducted as described in the License Renewal Application and that documentation supporting the application is in an auditable and retrievable form. With the exception of the items identified in this report, your scoping and screening process was successful in identifying those systems, structures, and components required to be considered for aging management.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, please contact Ms. Laura Kozak at (630) 829-9604.

Sincerely,

/Roy Caniano Acting for/

Cynthia D. Pederson, Director
Division of Reactor Safety

Docket Nos. 50-315; 50-316
License Nos. DPR-58; DPR-74

Enclosure: License Renewal Inspection Report
05000315/2004003(DRS); 05000316/2004003(DRS)

cc w/encl: J. Jensen, Site Vice President
M. Finissi, Plant Manager
G. White, Michigan Public Service Commission
Michigan Department of Environmental Quality
Emergency Management Division
MI Department of State Police
D. Lochbaum, Union of Concerned Scientists

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos:	50-315; 50-316
License Nos:	DPR-58; DPR-74
Report No:	05000315/2004003(DRS); 05000316/2004003(DRS)
Licensee:	American Electric Power Company
Facility:	Donald C. Cook Nuclear Power Plant, Units 1 and 2
Location:	1 Cook Place Bridgman, MI 49106
Dates:	May 17 through May 21, 2004
Inspectors:	L. Kozak, Senior Reactor Inspector P. Lougheed, Senior Reactor Inspector A. Walker, Senior Reactor Inspector B. Jose, Reactor Inspector R. Winter, Reactor Inspector J. Bond, Nuclear Safety Professional
Observer:	A. Wichman, Summer Intern
Approved by:	A. Vegel, Chief Systems Engineering Branch Division of Reactor Safety

Enclosure

TABLE OF CONTENTS

SUMMARY OF FINDINGS

IR 05000315/2004003(DRS); 05000316/2004003(DRS); 05/17/2004 - 05/21/2004; Donald C. Cook Nuclear Power Plant, Units 1 and 2; License Renewal Inspection Program, Scoping and Screening.

This inspection of License Renewal (LR) activities was performed by five regional office inspectors. The inspection followed NRC Manual Chapter 2516 and NRC Inspection Procedure 71002. This inspection did not identify any "findings" as defined in NRC Manual Chapter 0612.

The overall conclusion of this inspection was that there was reasonable assurance that the applicant had properly conducted license renewal scoping and screening for systems, structures, and components at the D. C. Cook Nuclear Power Plant. The inspection revealed the following issues:

- During a system walkdown of the Auxiliary Feedwater (AFW) system, the inspectors found that a portion of in-scope Condensate Storage Tank (CST) piping was partially buried in sand. The aging management review considered that this piping was exposed only to an external air environment and not a buried environment. The inspectors planned to follow up on this issue during the aging management program inspection to determine if all of the environments for this component have been identified and all of the appropriate aging management programs specified.

- The inspectors determined that the Emergency Core Cooling System (ECCS) piping leak detection enclosures for piping outside of containment were not included within the scope of license renewal but may be credited in the plant's offsite dose calculation. The applicant intended to perform another review of the function of the enclosures to determine if they should be included within the scope of license renewal. The inspectors planned to review this issue during the aging management program inspection.

- During a system walkdown of the Main Steam (MS) system, the inspectors found that the ambient environment in the room containing the MS stop valves was very hot and humid. The applicant's aging management review did not appear to consider this environment in determining the applicable aging management programs for the components in the system. The inspectors planned to review this issue during the aging management program inspection.

REPORT DETAILS

I. Inspection Scope

This inspection was conducted by NRC Region III inspectors to interview applicant personnel and to examine a sample of documentation which supports the license renewal application (LRA). This inspection reviewed the results of the applicant's scoping of plant systems and screening of components within those systems to identify the list of components that need evaluation for aging management. The team selected a sample of plant systems, structures, and components (SSC) from the LRA scoping results to verify the adequacy of the applicant's scoping and screening documentation and implementation activities. For the selected in-scope systems/structures, the associated boundary drawings, and the active/passive and short/long lived determinations of the selected SSCs were reviewed to confirm the accuracy of the applicant's results. In addition to the in-scope systems and structures, some systems that the applicant had determined not to be in scope for license renewal were selected for inspection. The inspectors reviewed supporting documentation and interviewed applicant personnel to confirm the accuracy of the LRA conclusions.

II. Findings

A. Evaluation of Scoping and Screening of Mechanical Systems

The inspectors evaluated the applicant's scoping and screening process for mechanical components by reviewing a number of plant systems that the applicant determined to be either within or out of the scope of license renewal (LR). The applicant performed scoping by creating a list of systems and structures using current licensing basis (CLB) documentation, including the updated final safety analysis report (UFSAR), technical specifications, and other licensing correspondence in addition to information from the facility database and plant drawings. Intended functions of these systems/structures were defined by reviewing the CLB, including the maintenance rule program and the expanded system readiness review reports. System evaluation boundaries were identified based on the intended functions and were indicated on license renewal boundary drawings. Screening was performed within the boundaries to identify long-lived passive components which were subject to an aging management review.

Scoping and screening for systems within the scope of license renewal was performed separately for systems and structures meeting the criterion of 10 CFR 54.4(a)(2) which addresses nonsafety-related SSCs that can affect the function of safety-related SSCs. System evaluation boundaries were not specifically identified for those systems or portions of systems that were in scope in accordance with (a)(2). This issue had been previously identified by NRR during the scoping and screening audit performed January 13 through 16, 2004, and documented in a report dated February 11, 2004. During the audit, NRR staff found that the LRA stated that for piping systems, the nonsafety-related piping and supports up to and including the first equivalent anchor beyond the safety/non-safety interface were within the scope of license renewal and subject to an aging management review. However, the applicant had not physically located the equivalent anchors in the plant. This issue is currently under review as a

request for additional information (RAI) 2.1-3. The applicant responded to this and other RAIs in a letter dated May 7, 2004. The response is currently under review by NRR.

The inspectors also determined that for systems in scope only under the (a)(2) criterion, a complete list of components subject to an aging management review was not generated. The applicant used a "spaces" approach to scoping in which all components in areas of the plant containing safety-related equipment were considered to be in scope. Using this approach, the applicant developed a list of component types and performed an aging management review. The adequacy of this approach is also under review by NRR in RAI 2.3.3.11-1, and in multiple RAIs that the applicant initially responded to in a letter dated May 20, 2004.

The following mechanical systems were reviewed:

1. Auxiliary Feedwater

The purpose of the auxiliary feedwater (AFW) system is to provide feedwater to the steam generators when the main feedwater supply is not available. The system is the safety-related source of feedwater for cooling as required during design basis events. The system also provides feedwater for the station blackout (SBO) and fire protection regulated events.

The evaluation boundary for each unit included one turbine-driven AFW pump and two motor-driven auxiliary feedwater pumps. Also included were the AFW strainers, the condensate storage tank (CST), and all associated piping, valves and instrumentation. The emergency water source, provided from the essential service water (ESW) system, was addressed separately, as were the room coolers. The applicant considered all of the AFW system to be in the scope of LR. Portions of the CST piping were excluded as they were considered to not perform a safety-related function, to not potentially impact the function of another safety system, and to not provide a function related to one of the regulated events.

The inspectors reviewed the LR boundary drawings, the application, the Individual System/Structure Scoping Report (ISSR), the Aging Management Review Report (AMRR), the Updated Final Safety Analysis Report (UFSAR) and other engineering documents. The inspectors also performed system walkdowns.

During the walkdown, the inspectors identified a pipe connected to the CST, which was partially buried in sand. The aging management review documentation showed this piping to be exposed to an external air environment. The inspectors questioned whether the appropriate aging management programs were chosen for this piping, given the actual environment identified during the walkdown. The applicant entered this issue into the corrective action program as Condition Report 04141040. The question as to whether the appropriate environment and aging management program were specified will be held as an open inspection issue and will be reviewed during the aging management program inspection.

Overall, the inspectors concluded that the applicant had performed scoping and screening for the AFW system in accordance with the methodology described in the LR application and the rule.

2. Auxiliary Steam

The purpose of the auxiliary steam (AS) system is to provide reduced pressure steam to various plant sub-systems to support plant operation. The system is in the form of a ring header and is cross connected between the two units. Some of the systems/sub-systems supplied by the AS system are plant heating, steam jet air ejectors, turbine steam seals, and fire protection. The plant heating boiler supplies steam to the AS system when both units are out of service.

None of the AS system normal functions require inclusion of the system in the scope of license renewal. However, the system is included in the scope of license renewal under the 10 CFR 54.4(a)(2) criterion due to the potential for spatial interactions with safety-related equipment. The portion of the AS system requiring aging management review is in the auxiliary building.

The inspectors walked down the AS system and reviewed the ISSR prepared for the system. Since the AS system has no intended safety functions, the scoping addressed the possible effect the failure of the system could have on the function of safety related equipment.

The inspectors reviewed LR boundary drawings, the UFSAR, engineering documentation, and the system/structure scoping report. The inspectors concluded that the applicant had performed scoping and screening for the auxiliary steam system in accordance with the methodology described in the LRA and the rule.

3. Control Air

The purpose of the control air (CTRLA) system is to provide a continuous supply of dry, oil-free, filtered compressed air to pneumatic instruments and air-operated valves and dampers for various process systems. Compressed control air is supplied to components in the turbine building, auxiliary building, and containment.

The CTRLA system is part of the compressed air system described in the UFSAR. The CTRLA system has a safety intended function of providing control air required to support the operation of a limited number of safety-related components. It also has a containment isolation function. Control air is supplied to components required to operate for the 10 CFR Part 50, Appendix R safe shutdown analysis and for the SBO event. Therefore, this system is within the scope of LR based on the criteria of 10 CFR 54.4(a)(1) and 10 CFR 54.4(a)(3).

The applicant included the containment isolation valves, a portion of the containment air ring header, and the air lines to the steam generator power-operated relief valves as being within the scope of the rule. The remainder of the system was excluded because it was considered to not perform a safety-related function, to not potentially impact the

function of another safety system, and to not provide a function related to one of the regulated events.

The inspectors reviewed the LR boundary drawings, the application, the ISSR, the AMRR, the UFSAR and other engineering documents. The inspectors also performed system walkdowns of accessible portions of the control air system. The inspectors concluded that the applicant had performed scoping and screening for the CTRLA system in accordance with the methodology described in the LR application and the rule.

4. Chemical and Volume Control System

The purpose of the chemical and volume control system (CVCS) is to support the RCS in a variety of ways. The CVCS is used to:

- Adjust the concentration of boric acid;
- Maintain the proper water inventory in the RCS;
- Provide the required seal water flow for the RCP shaft seals;
- Process reactor coolant effluent for reuse of boric acid and reactor makeup water;
- Maintain the proper concentration of corrosion-inhibiting chemicals in the reactor coolant;
- Maintain the reactor coolant activities within design limits; and
- Provide borated water for safety injection.

The system is also used to fill and hydrostatically test the RCS.

The centrifugal charging pumps and piping and components used for safety injection are evaluated as part of the ECCS. Class 1 piping and associated pressure boundary components in the reactor coolant pressure boundary are evaluated with the RCS. The CVCS system intended functions include:

- Maintaining the RCS pressure boundary;
- Providing RCS inventory control;
- Providing borated water for reactivity control;
- Supporting ECCS injection;
- Providing RCP seal injection and processing seal leakoff; and
- Providing cross-unit charging to support Appendix R-required safe shutdown of the opposite unit, which includes RCP seal injection, RCS inventory makeup, and reactivity control.

The CVCS is in scope as a safety-related system and portions are in scope as nonsafety-related affecting safety-related components. Portions of the CVCS are required to support fire protection requirements and requirements for station blackout. Therefore, the CVCS is within the scope of license renewal based on the criteria of 10 CFR 54.4(a)(1), 10 CFR 54.4(a)(2), and 10 CFR 54.4(a)(3).

The inspectors reviewed the LRA, applicable portions of the UFSAR, the system ISSR, license renewal boundary drawings and the AMRR for the CVCS system. In addition,

the inspectors performed a walkdown of the system with the system manager. The inspectors did not identify any components improperly excluded from aging management. The inspectors concluded that the applicant had performed scoping and screening for the CVCS system in accordance with the methodology described in the LRA and the rule.

5. Emergency Core Cooling System

The primary purpose of the emergency core cooling system (ECCS) is to automatically deliver cooling water to the reactor core in the event of a loss of coolant accident (LOCA). This limits the fuel clad temperature and thereby ensures the core will remain substantially intact and in place, with its essential heat transfer geometry preserved. For the rupture of a steam line or feedwater line and the associated rapid heat removal from the core, the ECCS adds shutdown reactivity so there is no consequential damage to the reactor coolant system and so the core remains intact and in place.

The ECCS includes the safety injection system (including the accumulators), the residual heat removal (RHR) system, and portions of the CVCS. It should be noted that the RHR spray header components have been evaluated with the containment spray system. The portions of the CVCS evaluated with the ECCS for license renewal are the two centrifugal charging pumps and the piping and components used for safety injection. The RHR system is also used for normal shutdown cooling, and each train of the RHR system is able to remove sensible heat from the core.

Portions of the ECCS support the requirements of 10 CFR 50.48. These include those portions of the RHR system required for removal of decay heat from the core to achieve and maintain safe shutdown, the centrifugal charging pumps, and components that provide manual isolation capability for the accumulators following a fire. All portions of the ECCS system are considered in scope due to the criteria set in 10 CFR 54.4(a)(1).

The inspectors reviewed the LRA, associated LR boundary drawings, the UFSAR, the ISSR, the AMRR, and performed a system walkdown. The inspectors concluded that the applicant had overall performed scoping and screening for the emergency core cooling system in accordance with the methodology described in the LRA and the rule. However, as a result of the system walkdown, the inspectors determined that certain ECCS piping outside of containment was surrounded by ECCS leak detection enclosures. The inspectors asked the applicant if these enclosures were safety-related and included within the scope of license renewal. The applicant responded that the enclosures were not safety-related and had not been included within the scope of license renewal. However, the applicant determined that the leak detection enclosures may be credited in the offsite dose calculation. The applicant initiated action request (AR) 04142013 to perform an additional review to determine if the enclosures support a safety-related function (i.e., the offsite dose calculation) and should be included within the scope of license renewal. The inspectors planned to review the applicant's determination during the future aging management program inspection. This will be an inspection open item pending that review.

6. Emergency Diesel Generator

The purpose of the emergency diesel (EDG) system is to provide a reliable, automatic onsite power source, with sufficient capacity to operate plant engineered safety features (ESF) and protection loads, in order to ensure the safe shutdown of the reactor and mitigate the consequences of a design basis accident in the event offsite power is lost. Each diesel engine is equipped with its own auxiliaries. These include starting and control air, fuel oil, lube oil, cooling water, intake and exhaust system, voltage regulator and controls.

The intended safety function of the EDG system is to provide power for the ESFs and protection system loads. The EDG is also credited in the support of the Appendix R safe shutdown analysis, and is a potential source of power for the recovery of a station blackout event. The EDG system is within the scope of LR based on the criteria of 10 CFR 54.4(a)(1), 10 CFR 54.4(a)(2), and 10 CFR 54.4(a)(3).

The inspectors reviewed LR boundary drawings, the UFSAR, engineering documentation, and system/structure scoping reports. The inspectors concluded that the applicant had performed scoping and screening for the emergency diesel generator systems in accordance with the methodology described in the LRA and the rule.

7. Essential Service Water

The purpose of the ESW system is to supply cooling water from the ultimate heat sink to essential heat loads, including the component cooling heat exchangers, the containment spray heat exchangers, the emergency diesel generator jacket water and lube oil coolers, the control room air conditioners (coolers and chiller condensers) and the auxiliary feedwater pump enclosure coolers.

The ESW system is an emergency water supply for the emergency diesel generator jacket water surge tank. The Unit 1 east ESW train is cross-connected to the Unit 2 west header; the Unit 1 west train is cross-connected to the Unit 2 east header. In addition to the primary intended function of providing cooling water, the ESW system is a back-up suction source for the auxiliary feedwater pumps for use when the condensate storage tank is unavailable as a source of supply. The ESW system unit cross-tie is credited in the Appendix R safe shutdown analysis, so the system is required for compliance with 10 CFR 50.48.

In accordance with 10 CFR 54.4(a)(2), nonsafety-related portions of the system are subject to aging management review if their failure could prevent satisfactory accomplishment of a safety function. Nonsafety-related component types in the ESW system that require aging management review for 10 CFR 54.4(a)(2) are located in the auxiliary building and screen house and consist of bolting, valves, tubing and piping. The applicant concluded that the environment and materials are the same in safety-related and nonsafety-related portions of the system.

The ESW system is the safety-related source of cooling to ESF equipment. The ESW system also provides cooling to 10 CFR Part 50, Appendix R safe shutdown equipment. Nonsafety-related portions of the system must maintain mechanical and structural

integrity so that nearby safety-related equipment is not adversely affected. Consequently, the applicant considered all of the ESW system to be within the scope of LR based on the criteria of 10 CFR 54.4(a)(1), 10 CFR 54.4(a)(2), and 10 CFR 54.4(a)(3).

The inspectors reviewed the LR boundary drawings, the application, the ISSR, the AMRR, the UFSAR and other engineering documents. The inspectors also performed system walkdowns. The inspectors concluded that the applicant had performed scoping and screening for the reactor vessel in accordance with the methodology described in the LR application and the rule.

8. Fire Protection

The fire protection (FP) system detects and suppresses fires while limiting their damage. The system is composed of several subsystems including: a fire detection system, fire alarm and annunciation systems, a fire water supply distribution system, fire water pumping systems, water suppression systems, gaseous suppression systems, a turbine-bearing dry chemical system, and manual fire fighting systems. Design features of the plant are incorporated into the FP system to limit fire damage. Some of these features include: fire barriers, fire doors, fire dampers, penetration seals, cable tray fire stops, west motor-driven auxiliary feedwater pump enclosure (Units 1 and 2), roof smoke and heat vents, and floor drains. The water supply for the fire water tanks is the municipal water supply.

The FP system is credited in the Appendix R safe shutdown analysis, since it supplies cooling water to the security diesel, which powers lighting needed to achieve safe shutdown. The fire protection license renewal boundary excludes FP equipment and piping that are not required to meet 10 CFR 50.48. Parts of the FP system are out of scope because equipment in the following areas perform no safe shutdown function and is not otherwise required for compliance with 10 CFR 50.48: computer rooms, generator unit and shared equipment, and service building, turbine bearing area, security building, fabrication shop warehouse, store room and warehouses, visitors center, access control building, screenhouse diesel fire pump room, auxiliary building drumming room/personnel passageway, radioactive waste material handling building, office buildings, training building, and selected portions of the turbine building and service building. The rest of the FP system is in scope due to fire protection criteria set in 10 CFR 54.4(a)(3).

The inspectors reviewed the LRA, associated LR boundary drawings, the UFSAR, engineering documentation, and system/structure scoping reports. The inspectors concluded that the applicant had performed scoping and screening for the fire protection system in accordance with the methodology described in the LRA and the rule.

9. Main Feedwater

The main feedwater (FW) system supplies feedwater to the steam generators under all steady state and transient load conditions at appropriate temperature, pressure, and flow automatically based on input signals from the steam generator water level control system, thereby maintaining the water level of the steam generators. The FW system

uses turbine-driven feedwater pumps to supply water from the condensate system to the steam generators. Additionally, the FW system includes high pressure feedwater heaters to improve plant thermal efficiency by preheating the feedwater.

The FW system flowpath from the main feedwater check valves to the steam generator is safety-related. This portion of the system provides an extension of the containment liner and provides a flowpath for the auxiliary feedwater to the steam generators. In addition to these safety intended functions, the system also provides engineered safety features actuation system (ESFAS) feedwater isolation and feedwater regulating valve (FRV) closure when required. The mechanical function required of the main feedwater system during a station blackout is to maintain the secondary system pressure boundary from the main feedwater check valves to the steam generators. The mechanical functions required of the FW system during an Appendix R safe shutdown are to maintain the same portion of the secondary system pressure boundary and to support auxiliary feedwater addition to the steam generators.

The LR boundary evaluated by the applicant for the FW System includes bolting, piping and valves from (and including) the main feedwater check valves up to the steam generator. The FW system scope also includes the component supports (piping structures, etc.), as well as associated baseplates and anchors. The building structures that the supports are attached to are outside the scope of the FW system boundary. The vents and drains for the FW high pressure heaters are scoped as part of the heater drains and vents (HDV) system. The FW system interface with the steam generators is identified as the upstream side of the feedwater check valve. The applicant identified the intended function of the scoped portion of the FW system as a pressure boundary or leaktight barrier to protect public health and safety in the event of postulated design basis events.

The FW system is also included in the scope of license renewal due to the potential for spatial interactions with safety-related equipment. The main feedwater system components require aging management review for 10 CFR 54.4(a)(1), 10 CFR 54.4(a)(2) and 10 CFR 54.4(a)(3).

The inspectors reviewed LR boundary drawings, the UFSAR, engineering documentation, and system/structure scoping reports. The inspectors concluded that the applicant had performed scoping and screening for the main feedwater system in accordance with the methodology described in the LRA and the rule.

10. Ice Condenser

The purpose of the ice condenser (ICE) system is to provide a flowpath and sufficient ice to absorb thermal energy from a LOCA or a main steam line break (MSLB) in order to limit containment pressure rise to less than design pressure immediately following an accident. The ICE system assists in iodine removal from the containment atmosphere and provides an inventory source for the containment recirculation sump to support sump recirculation level, pH and boron requirements.

The ICE system refrigeration components maintain the ice bed temperature within analyzed limits and replenish the ice beds during outages. The ICE system includes all

system structural steel, ice baskets, pressure-activated doors, the various components that cool the ice condenser, and all instrument and controls associated with these components and sub-systems.

The safety intended functions of the system, post accident containment pressure and temperature control, iodine removal and sump inventory source, are provided by the ice bed, blowdown flowpath pressure activated doors, and the associated structural components. Safety-related portions of the system refrigeration components also provide containment isolation when required. The system is also in the scope of license renewal due for the potential for spatial interactions with safety-related equipment. The components requiring aging management review under this criterion are nonsafety-related portions of the ICE system refrigeration components in the auxiliary and containment buildings.

The inspectors reviewed LR boundary drawings, the UFSAR, engineering documentation, and system/structure scoping reports. The inspectors concluded that the applicant had performed scoping and screening for the ICE system in accordance with the methodology described in the LRA and the rule.

11. Lake Township Water

The purpose of the Lake Charter Township water (LTW) system is to supply water for the makeup pretreatment and filtration plant and the dedicated fire protection water supply tanks. The LTW system also supplies cooling water for the nonessential service water pump seals and potable water for the plant site.

The LTW system is a nonsafety-related system that is within the scope of license renewal based on the criteria of 10 CFR 54.4(a)(2). Portions of this water system are in safety-related structures adjacent to safety-related components and therefore could interact spatially with those components.

The inspectors reviewed the LRA and the aging management review report for nonsafety-related systems and components affecting safety-related systems. The inspectors walked down portions of the LTW system in the auxiliary building. Based on this review, the inspectors did not identify any components improperly excluded from aging management. The inspectors concluded that the applicant had performed scoping and screening for the LTW system in accordance with the methodology described in the LRA and the rule.

12. Main Steam

The purpose of the main steam (MS) system is to deliver steam from the steam generators to the turbine and to other equipment or systems requiring main steam, including the safety-related turbine drivers for two auxiliary feedwater pumps. Additionally, the MS system has a safety function to remove heat from the reactor coolant system (RCS) via the main steam safety valves to prevent RCS overpressurization. With the main steam isolation valves closed, the steam generator power-operated relief valves have a safety function to provide a controlled cooldown. In addition, the system also provides containment isolation of the steam sampling lines

when required. The controlled cooldown function with the steam generator power operated relief valves also supports the Appendix R safe shutdown and SBO events.

The MS system is also included in the scope of LR due to the potential for spatial interactions with safety-related equipment. The nonsafety-related components in the MS system that require aging management review for 10 CFR 54.4(a)(2) are in the auxiliary building, and the turbine building in the auxiliary feedwater pump rooms. Therefore, the MS system is within the scope of LR based on the criteria of 10 CFR 54.4(a)(1), 10 CFR 54.4(a)(2), and 10 CFR 54.4(a)(3). Some portions of the MS system in the turbine building were excluded as they were considered to not perform a safety-related function, to not potentially impact the function of another safety system, and to not provide a function related to one of the regulated events.

The inspectors reviewed the LR boundary drawings, the application, the ISSR, the AMRR, the UFSAR and other engineering documents. The inspectors also performed system walkdowns.

During the walkdown of the MS system, the inspectors noted that the ambient environment in the rooms containing the MS stop valves was generally around 100 degrees Fahrenheit (°F), with high humidity. However, the aging management review listed the external environment as air, with only loss of material specified as a degradation mechanism. The inspectors consulted the Generic Aging Lessons Learned (GALL) report and determined that the standard environment would be considered air (less than 212°F), moisture, and humidity, i.e., very similar to what existed during the walkdown. The GALL noted that degradation mechanisms would be both loss of material and general corrosion and that a plant specific aging management program was required. The degradation mechanism of general corrosion was absent from the applicant's AMRR. Additionally, the applicant's planned method of aging management was to perform quarterly system walkdowns. The inspectors questioned the efficacy of this approach, given that the piping was insulated, the area was congested, the access was limited and the overall temperatures were hot enough to preclude lengthy stay times. The question as to whether the appropriate environment and aging management program were specified will be held as an open inspection issue which will be reviewed during the aging management program inspection.

In regard to the portion of the MS system which was scoped in under 10 CFR 54.4(a)(2), the inspectors determined that there were no LR boundary drawings and that specific components were not identified. The inspectors noted that the Office of Nuclear Reactor Regulation (NRR) had also raised this concern during an audit and that there were several requests for additional information on how the (a)(2) components were being handled. Therefore, this issue will not be tracked as a separate open item; however, the specific examples will be provided to NRR.

The inspectors concluded that the applicant had performed scoping and screening for the MS system in accordance with the methodology described in the LR application and the rule.

13. Reactor Nitrogen

The function of the reactor nitrogen (N2) system is to provide nitrogen for purging and blanketing tanks and equipment in the reactor coolant system and nuclear auxiliary systems for both Units 1 and 2. The N2 system also supplies nitrogen to the ECCS accumulators and a back up supply to the steam generator power operated relief valves.

The backup nitrogen supply to the steam generator power operated relief valves supports operation of the valves for a controlled cooldown for the Appendix R safe shutdown analysis. The N2 system components require aging management review under the criteria of 10 CFR 54.4(a)(1) and 10 CFR 54.4 (a)(3).

The inspectors reviewed LR boundary drawings, the UFSAR, engineering documentation, and system/structure scoping reports. The inspectors concluded that the applicant had performed scoping and screening for the reactor nitrogen system in accordance with the methodology described in the LRA and the rule.

14. Nonessential Service Water

The purpose of the nonessential service water (NESW) system is to provide cooling water to various plant heat loads that have no safety functions. The heat loads supplied by NESW include the turbine oil coolers, air compressors, upper and lower containment ventilation units, and reactor coolant pump (RCP) motor air coolers. The NESW pumps take suction from either Unit 1 or Unit 2 circulating water intake tunnels or discharge tunnels and discharge into either Unit 1 or Unit 2 circulating water discharge tunnels.

The only portions of the NESW system that the applicant included within the scope of the rule were the containment isolation valves. Other piping segments were included due to having a spatial relationship with safety related components, in accordance with 10 CFR 54.4(a)(2).

The inspectors reviewed the LR boundary drawings, the application, the ISSR, the AMRR, the UFSAR and other engineering documents. The inspectors also performed system walkdowns. Based upon drawing review, the inspectors noted that the NESW system was physically connected to the safety-related AFW pumps. Therefore, the inspectors questioned the location of the anchor which supported the nonsafety-related piping. The applicant's position was that no specific anchor had been identified as all NESW piping in the AFW pump rooms was in-scope due to spatial interactions. This position also applied to the portion of the NESW system past the containment isolation valves. The applicant had not specifically identified any NESW components which were in scope based on the requirements of 10 CFR 54.4(a)(2). This issue will not be tracked as a separate open item; however, the specific examples will be provided to NRR. Overall, the inspectors concluded that the applicant had performed scoping and screening for the reactor vessel in accordance with the methodology described in the LR application and the rule.

15. Reactor Coolant System

The purpose of the reactor coolant (RCS) system was to contain pressurized and treated water while transporting heat from the reactor core to the steam generators. The system consists of four similar transfer loops connected in parallel to the reactor vessel. Each loop contains a reactor coolant pump and a steam generator. In addition, the system contains a pressurizer, a pressurizer relief tank, and the necessary interconnecting piping and instrumentation. All major components are located in the reactor containment.

During operation, the reactor coolant pumps circulate pressurized water through the reactor vessel and the reactor coolant loops. The water, which serves as a coolant, moderator, and solvent for boric acid (chemical shim control), is heated as it passes through the core. The water then flows to the steam generators, where the heat is transferred to the secondary system. The coolant exits the steam generators, returning to the reactor coolant pumps to repeat the cycle.

System pressure is controlled in the pressurizer where water and steam are maintained in equilibrium by electric heaters and water sprays. The pressurizer lower half is filled with saturated water and the top half is filled with saturated steam. Pressurizer heaters in the liquid space are used to form steam to raise and maintain pressure. Pressurizer sprays in the steam space are used to condense steam to lower pressurizer pressure.

Overpressure protection is provided by three spring-loaded safety valves and three power operated relief valves connected to the pressurizer. The low temperature over pressure (LTOP) system provides overpressure protection during low temperature operation of the reactor coolant system when the reactor vessel is vulnerable to brittle fracture failure. The LTOP system is a combination of automatic devices, passive relief devices, and administrative controls designed to ensure that RCS pressure is maintained within specified limits. The RCS is within the scope of LR based on the criteria of 10 CFR 54.4(a)(1), 10 CFR 54.4(a)(2), and 10 CFR 54.4(a)(3).

The inspectors reviewed LR boundary drawings, the UFSAR, engineering documentation, and system/structure scoping reports. The inspectors concluded that the applicant had performed scoping and screening for the reactor coolant system in accordance with the methodology described in the LRA and the rule.

16. Radiation Monitoring System

The Radiation Monitoring (RMS) system is a collection of small independent systems located at selected points in and around the plant, to detect, compute, and record radiation levels. These systems are composed of three categories/types of monitors. These are area monitors, process monitors, and environmental monitors. Some of the RMS components are designed to operate during adverse or plant accident conditions.

In the event that radiation levels should exceed a pre-determined setpoint, an alarm would be initiated in the control room. The mechanical portions of the RMS have an intended safety function to provide containment isolation. The system is also included in the scope of license renewal due to the potential for spatial interactions with safety

related equipment. The radiation monitoring system components requiring aging management review are in the auxiliary and containment buildings.

The inspectors reviewed LR boundary drawings, the UFSAR, engineering documentation, and system/structure scoping reports. The inspectors concluded that the applicant had performed scoping and screening for the radiation monitoring system in accordance with the methodology described in the LRA and the rule.

17. Reactor Vessel Level Indication System

The purpose of the reactor vessel level instrumentation system (RVLIS) is to indicate the relative vessel water level or the relative void content of fluid in the vessel during post-accident conditions. This level indication assists the operator in recognizing conditions, which may lead to damage of the vessel or the core. Sensors measuring the differential pressure between the vessel head and bottom, and between the head and the hot legs provide the basis for level and void fraction indication. The intended safety function of the mechanical portions of the system is to maintain the reactor coolant pressure boundary. This system is included in within the scope of LR based on the criteria of 10 CFR 54.4(a)(1) and is included in the review of the RCS.

The inspectors reviewed LR boundary drawings, the UFSAR, engineering documentation, and system/structure scoping reports. The inspectors concluded that the applicant had performed scoping and screening for the reactor vessel level indication system in accordance with the methodology described in the LRA and the rule.

18. Auxiliary Building Ventilation

The auxiliary building ventilation (VAB) system encompasses four different ventilation subsystems in the auxiliary building. The applicant considered the engineered safety features ventilation and fuel handling area exhaust as separate subsystems. The two remaining VAB subsystems, covered under the VAB ISSR, consisted of the general ventilation systems and the general supply system. The applicant concluded that these VAB subsystems did not have any functions which met the criteria for inclusion within the scope of LR, other than the potential for spatial interactions with safety-related equipment.

The inspectors reviewed the LR boundary drawings, the application, the ISSR, the AMRR, the UFSAR and other engineering documents. The inspectors also performed a system walkdown, as part of walkdowns for other systems. The inspectors concluded that the applicant had performed scoping and screening for the VAB system in accordance with the methodology described in the LR application and the rule.

19. Containment Ventilation

The purpose of the containment ventilation (VCONT) system is to maintain temperatures in the various portions of the containment within acceptable limits for operation of equipment, and for personnel access for inspection, maintenance, and testing as required. The system also has capability for purging the containment

atmosphere to the environment via the plant vent. The system can also be used to remove airborne contamination from containment prior to personnel entry.

The VCONT system consists of a number of essentially independent subsystems, including containment equalization (CEQ) system, which is addressed separately in the LR application. Other than the CEQ system, the only safety intended function is containment isolation, provided by certain system components.

In accordance with 10 CFR 54.4(a)(2), nonsafety-related component types in the VCONT system are subject to aging management review if their failure could prevent satisfactory accomplishment of a safety function. The only non-safety-related component type requiring aging management review under 10 CFR 54.4(a)(2) is housings.

The inspectors reviewed the LR boundary drawings, the application, the ISSR, the AMRR, the UFSAR and other engineering documents. The inspectors concluded that the applicant had performed scoping and screening for the VCONT system in accordance with the methodology described in the LR application and the rule.

20. Circulating Water

The once-through circulating water system supplies cooling water to the condensers and turbine auxiliary coolers. It also supplies the water for the screen wash system, the service water systems and miscellaneous minor water requirements for Units 1 and 2. The circulating water system is not within the scope of license renewal since it is a nonsafety-related system and any failure of the system cannot impact the required safety functions.

The inspectors reviewed the LRA, the applicable section of the UFSAR, and performed a walkdown of the circulating water system. The inspectors concluded that the applicant had performed scoping of the circulating water system in accordance with the methodology described in the LRA and the rule.

21. Main Generator

The purpose of the main generator (GEN) system is to convert a portion of the turbine's mechanical energy to electrical energy. The voltage produced by the main turbine generator is directly related to the speed of the generator and strength of the rotor's magnetic field. The main generator system includes the exciter, bus duct cooling, stator cooling water system, hydrogen gas cooling system, and generator seal oil system.

The GEN system has no safety function and is located in the turbine building. No equipment with a safety function is located near the main generator. The intended function of the equipment is to provide electric power for sale to the public. Therefore, the applicant concluded that the GEN system was excluded from the scope of license renewal.

The inspectors reviewed LR boundary drawings, the UFSAR, engineering documentation, and system/structure scoping reports. The inspectors concluded that

the applicant had performed scoping and screening for the main generator system in accordance with the methodology described in the LRA and the rule.

22. Reactor Hydrogen

The purpose of the reactor hydrogen (H2) system is to interface with the volume control tanks in the CVCS system to scavenge the oxygen produced due to radiolysis of the reactor coolant in the core region of the reactor during normal operation. The system includes a pair of high pressure hydrogen bottles, the header regulating valve, distribution piping to the volume control tanks and the regulator supplying the tanks. The safety related components in the system have been scoped within the CVCS. Therefore, the H2 system itself was excluded from the scope of license renewal.

The inspectors reviewed LR boundary drawings, the UFSAR, engineering documentation, and system/structure scoping reports. The inspectors concluded that the applicant had performed scoping and screening for the reactor hydrogen system in accordance with the methodology described in the LRA and the rule.

23. Turbine Building Ventilation

The purpose of the turbine building ventilation (VTB) is to maintain temperatures in various portions of the turbine building (such as the heater bay, turbine room pump pits, and the plant heating boiler room) within acceptable limits for equipment operation and personnel access. Some portions of the VTB also operate to control accumulation of explosive vapors and other potentially harmful gases.

The applicant concluded that the system was not within the scope of the rule. As a result, no LR boundary drawings or aging management requirements were generated. The inspectors reviewed the plant layout drawings, the application, the ISSR, and the UFSAR. The inspectors performed a system walkdown, as part of walkdowns for other systems. The inspectors also discussed the location and purpose of the system with the applicant. The inspectors concluded that the applicant had correctly scoped the VTB system as being outside the requirements of 10 CFR 54.4.

B. Evaluation of Scoping and Screening of Electrical Systems/Components

As stated in section 2.5 of the LRA, all plant electrical and instrumentation and control (I&C) systems were included in the scope of license renewal. This was a bounding approach that includes all components in the scope, even some that are not required by the rule. Components were grouped into commodity groups and intended functions were identified. Commodity groups that were considered to be active components were excluded from further review. A plant “spaces” approach which considers plant areas and the environment in those areas was used to perform the aging management reviews.

Electrical/I&C component groups associated with electrical, I&C, and mechanical systems within the scope of license renewal were identified. This step included a complete review of design drawings and electrical/I&C component groups in the plant component database. A description and function for each of the electrical/I&C

component groups were identified. The electrical/I&C component groups that perform an intended function without moving parts or without a change in configuration or properties [screening criterion of 10 CFR 54.21(a)(1)(i)] were identified. For the resulting passive electrical/I&C component groups, component groups that are not subject to replacement based on a qualified life or specified time period [screening criterion of 10 CFR 54.21(a)(1)(ii)] were identified as requiring an AMR. Electrical and I&C component groups included in the 10 CFR 50.49 Environmental Qualification (EQ) Program were considered to be subject to replacement based on qualified life, and thus eliminated from the list. Next certain passive, long-lived electrical/I&C component groups that do not support license renewal system intended functions were eliminated.

The following commodity groups were reviewed by the applicant. Some were determined to be within the scope and some were outside the scope of license renewal. The inspectors reviewed the application, license renewal program topical reports, the electrical AMRR, the UFSAR and other engineering documents. The inspectors also performed electrical system walkdowns. The inspectors concluded that the applicant had performed scoping and screening for the electrical commodity groups in accordance with the methodology described in the LR application and the rule.

1. Insulated Cables and Connections

   EQ cables and connections were screened out based on being periodically replaced as determined by the Time Limiting Aging Analysis (TLAA). All non-EQ insulated cables and connections were evaluated for aging management based on material properties and the applicable environment. Connection components included splices, connectors, fuse blocks, and terminal blocks.

2. Electrical and I&C Penetrations

   The applicant excluded all of the electrical penetrations which serve as the containment boundary for electrical systems because the aging management for electrical functions is controlled by the environmental qualification program and the pressure boundary function is controlled by programs associated with the primary containment system.

3. Phase Bus and Transmission Conductors

   The applicant excluded phase bus and transmission conductors because these commodities were outside the boundary that had an intended function of restoration of power after a station blackout.

4. Switchyard Bus

   The applicant evaluated the switchyard bus that had an intended function of restoration of power after a station blackout. The boundary included the first switchyard breaker and the underground cables to the reserve auxiliary transformers and the path to the 4160 Vac switchgear for each unit.

5. High Voltage Insulators

The applicant evaluated the high voltage insulators that had an intended function of restoration of power after a station blackout. The boundary included the first switchyard breaker and the underground cables to the reserve auxiliary transformers and the path to the 4160 Vac switchgear for each unit.

6. Uninsulated Ground Conductors

Uninsulated ground conductors were excluded from aging management because they were determined not to perform an intended function.

C. Evaluation of Scoping and Screening of Structures

1. Auxiliary Building

The purpose of the auxiliary building is to support and protect plant equipment, including much of the nuclear steam supply system and other auxiliary systems. Both units share the auxiliary building, which houses common areas as well as sections dedicated to each unit. The auxiliary building encloses the fuel storage areas, diesel generator rooms, switchgear rooms, control facilities, and other equipment. The building is principally a reinforced concrete structure consisting mainly of exterior and interior walls, flat roofs, floor slabs, and a flat foundation mat. The building is classified as a safety-related, seismic Class I structure.

The safety intended functions of the auxiliary building are to support and protect safety-related plant equipment. The auxiliary building provides physical support for itself, engineered safety features, and other systems and equipment located within the structure. The exterior walls and roofs of the auxiliary building protect against tornado-generated or turbine-generated missiles and provide protection against the weather for systems and equipment within the structure. The auxiliary building includes the spent fuel pool and liner, which maintain a sufficient water inventory to provide shielding and cooling for the fuel.

The auxiliary building also supports and protects safety-related 10 CFR Part 50, Appendix R safe shutdown equipment and equipment used to cope with station blackout. The auxiliary building includes nonsafety-related commodity groups that must maintain mechanical and structural integrity so that nearby safety-related equipment is not adversely affected. The inspectors concluded that the applicant appropriately scoped and screened this area in accordance with the LRA and the rule.

2. Containment

The purpose of the containment structure is to serve as both a biological shield and a pressure container during a LOCA or steam line break accident. The containment structure, including all penetrations and the interior structure, is part of the engineered safety features included in the design of the plant and is classified as a safety-related, seismic Class I structure. Both units use ice condenser reactor containment systems. The containment building is a reinforced concrete structure consisting of a vertical

cylinder, a hemispherical dome, and a flat base slab. A steel liner is attached to the inside face of the concrete (shell, dome, and the base slab) to ensure a high degree of leak tightness. The interior of the containment structure is divided into three compartments: a lower compartment, an intermediate compartment, an upper compartment.

The ice condenser is essentially a well-insulated cold storage room in which ice is maintained in an array of vertical cylindrical columns. The ice condenser is contained in the annulus formed by the containment vessel wall and the crane wall, circumferentially over a 300-degree arc. The refueling canal and equipment hatch are located in the remaining 60-degree arc. The ice condenser compartment extends from below the operating deck to the top of the crane wall. Seals are provided on the boundary of the lower and upper compartments and on the hatches in the operating deck to limit steam bypassing the ice condenser.

The primary safety intended function of the containment is to limit the release of radioactive fission products following an accident thereby limiting the dose to the public and control room operators. The containment structure also provides physical support for itself, the reactor system, engineered safety features, and other systems and equipment located within the structure. The exterior walls and dome provide protection for the reactor vessel and other safety-related SSCs inside the containment from missiles (internal and external) and natural phenomena.

The containment includes nonsafety-related commodity groups that must maintain mechanical and structural integrity so that nearby safety-related equipment is not adversely affected. The containment also supports, protects, and provides penetrations for 10 CFR Part 50, Appendix R safe shutdown equipment, environmentally qualified electrical equipment, and equipment used to cope with a station blackout.

The inspectors concluded that the applicant appropriately scoped and screened this area in accordance with the LRA and the rule.

3. Turbine Building and Screenhouse

D. C. Cook Units 1 and 2 share the turbine building and screenhouse, which house several common areas (such as the make-up plant) as well as sections dedicated to each unit. The purpose of the turbine building and screenhouse is to house and protect plant equipment. This includes the main turbine, generator, and auxiliary equipment in the turbine building and the circulating water (CW pumps and ESW pumps) in the screenhouse.

The turbine building is a three-tiered structure that adjoins the auxiliary building. It includes the turbine room, the heater bay areas, and the service bay areas. The turbine building and screenhouse share a masonry wall and a seismic Class I foundation. The AFW and ESW pumps and their associated piping systems are housed within protective seismic Class I structures supported by the foundation.

The screenhouse is a concrete structure located adjacent to Lake Michigan. Below the superstructure of the building are the pump bays and piers, which guide traveling

screens that collect debris and fish. Below grade on the north and south sides of the screenhouse are discharge tunnels that connect the condensers and discharge piping. Two discharge pipes run out into Lake Michigan. Between the screenhouse and the shore, there is a 20-foot-wide concrete roadway. Below this roadway are the screenhouse forebay and its connection to the de-icing tunnels and intake pipes. The three intake pipes connect the intake cribs, located underwater, to the forebay.

The turbine building is principally reinforced concrete at and below grade elevation, consisting mainly of exterior and interior walls, floor slabs, turbine and generator pedestals, and a flat seismic Class I foundation mat. Above grade, the turbine building is essentially a steel superstructure covered by aluminum siding.

Within the screenhouse, concrete barriers protect the ESW pumps against turbine missiles and from fires or other accidents in the adjacent ESW pump compartments. In addition, the ESW pump compartments are designed to withstand tornado-velocity wind effects and tornado-borne missiles. Flood protection to elevation 595' is provided for safety-related components. The ESW pump motors are above elevation 595' and are therefore adequately protected from maximum flood condition anticipated due to a seiche or surge phenomenon.

The safety intended functions of the turbine building and screenhouse are to support and protect safety-related plant equipment. The turbine building and screenhouse provide physical support for systems and equipment located within the structure. The walls and roofs of the turbine building and screenhouse protect against tornado-generated or turbine-generated missiles and provide weather protection to the systems and equipment within the structure. The turbine building and screenhouse includes nonsafety-related commodity groups that must maintain mechanical and structural integrity so that nearby safety-related equipment is not adversely affected. The turbine building and screenhouse also support and protect 10 CFR Part 50, Appendix R safe shutdown equipment and equipment used to cope with station blackout.

The inspectors concluded that the applicant appropriately scoped and screened this area in accordance with the LRA and the rule.

4. Fire Protection Pump House

The fire protection pump house was determined to be within the scope of license renewal based on the criteria of 10 CFR 54.4(a)(3). The structure provides support and protection for equipment required by 10 CFR 50.48.

The inspectors reviewed the ISSR and the aging management review report for miscellaneous yard structures. The inspectors also performed a walkdown of the fire protection pump house with the system manager. The inspectors did not identify any components improperly excluded from aging management. The inspectors concluded that the applicant had performed scoping and screening for the fire protection pump house in accordance with the methodology described in the LRA and the rule.

5. Switchyard Control House

The purpose of this building and associated foundation is to provide support and protection for those components that support the intended function of restoring power after a station blackout. The switchyard control house is constructed of reinforced concrete and includes the foundation, walls, and roof. The structure supports the intended function for breakers (component ID numbers 12AB and 12CD) used for station blackout. The inspectors concluded that the applicant appropriately scoped and screened this area in accordance with the LRA and the rule.

6. Tank Foundations

The purpose of the Unit 1 and 2 tank foundations are to provide structural support for the following tanks: the safety-related refueling water storage tank (component ID number 1-TK-33, 2-TK-33), condensate storage tank (component ID number 1-TK-32, 2-TK-32), fire protection water storage tank (component ID number 1-TK-295N, 2-TK-295S), and primary water storage tank (component ID number 1-TK-31, 2-TK-31).

The inspectors concluded that the applicant appropriately scoped and screened this area in accordance with the LRA and the rule.

7. Containment Access Building

The purpose of this building and associated foundation is to provide support and protection for office space and a radiological access to containment during outages. The applicant concluded that this structure was not within the scope of the rule. As a result, no structural evaluation or aging management requirements were generated. The inspectors performed a building walkdown. The inspectors concluded that the applicant had correctly scoped the containment access building as being outside the requirements of 10 CFR 54.4.

8. Gas Cylinder Storage

The gas cylinder storage building stores miscellaneous gas cylinders and is located on grade south of the Unit 2 turbine building. This structure is not connected to seismic structures and does not provide: structural support or functional support for safety-related equipment; shelter or protection for safety related equipment; structural or functional support for nonsafety-related equipment whose failure could directly prevent satisfactory accomplishment of required safety-related functions; missile barriers (internally or externally generated); flood protection barriers (internal or external flooding event); rated fire barriers to confine or retard a fire from spreading to or from adjacent regulatory fire areas or regulatory fire zones; or structural or functional support for components credited from regulated events.

The applicant assessed that this structure was outside of the scope of license renewal because it does not perform any 10 CFR Part 54 intended functions. The inspectors reviewed the applicant's determination, performed a walkdown of this area and concluded that the applicant had correctly scoped the gas cylinder storage area as being outside the requirements of 10 CFR 54.4.

9. Deluge Valve Houses

The purpose of this building and associated foundation is to provide support and protection for valves and equipment used in fire suppression for the buildings that are outside the protected area. The applicant concluded that the system was not within the scope of the rule. As a result, no structural evaluation or aging management requirements were generated. The inspectors performed a building walkdown. The inspectors concluded that the applicant had correctly scoped the deluge valve houses as being outside the requirements of 10 CFR 54.4.

III. Exit Meeting Summary

The results of this inspection were discussed on May 21, 2004 with members of the D. C. Cook staff in an exit meeting. The applicant acknowledged the findings presented.

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Applicant
D. Fadel
R. Finnin
R. Grumbir
N. Haggerty
J. Jensen
B. Kalinowski
L. Lindquist
K. Riches
R. Schlichter
T. Woods

Nuclear Regulatory Commission
B. Kemker
I. Netzel
C. Pederson
A. Vegel

LIST OF DOCUMENTS REVIEWED

The following is a list of licensee documents reviewed during the inspection, including documents prepared by others for the licensee. Inclusion on this list does not imply that NRC inspectors reviewed the documents in their entirety, but that selected sections or portions of the documents were evaluated as part of the overall inspection effort. Inclusion on this list does not imply NRC acceptance of the document, unless specifically stated in the inspection report.

License Renewal Boundary Drawings

LRA-12-5103-0; Standard Symbols (Piping and Valves); Revision 0

LRA-12-5104-0; Standard Symbols; Revision 0

LRA-12-5118B-0; Nitrogen and Hydrogen Gas Reactor System, Units 1 and 2; Revision 0

LRA-12-5120B-0; Compressed Air System, Plant Air, Auxiliary Building, and Control Air for Containment; Revision 0

LRA-12-5120G-0; Standard Symbols Control Air System, Units 1 and 2; Revision 0

LRA-12-5131-0; Chemical and Volume Control System Boron Makeup, Units 1 and 2; Revision 0

LRA-12-5148-0; Auxiliary Building Ventilation, Units 1 and 2; Revision 0

LRA-12-5148A-0; Auxiliary Building Ventilation, Elevation 633’-0", Units 1 and 2; Revision 0

LRA-12-5148B-0; Miscellaneous Safety Related Ventilation Systems; Revision 0

LRA-12-5148J-0; Fire Pump House Floor, Elevation 598’-0" Ventilation System, Units 1 and 2; Revision 0

LRA-12-5148K-0; Auxiliary Building “West” Ventilation Floor, Elevation 609'-0", Units 1 and 2; Revision 0

LRA-12-5148L-0; Auxiliary Building “East” Ventilation Floor, Elevation 609'-0", Units 1 and 2; Revision 0

LRA-12-5148M-0; Auxiliary Building “West” Ventilation Floor, Elevation 587-0", Units 1 and 2; Revision 0

LRA-12-5148P-0; Auxiliary Building Ventilation Floor, Elevation 573'-0", Units 1 and 2; Revision 0

LRA-12-5150B-0; Security Diesel Generator; Revision 0

LRA-12-5152-0; Fire Protection Water – Yard Piping, Units 1 and 2; Revision 0

LRA-12-5152A-0; Fire Protection Water – Piping at Pumps, Units 1 and 2; Revision 0

LRA-12-5152D-0; Fire Protection Water – Auxiliary and Containment Buildings, Units 1 and 2; Revision 0

LRA-12-5152E-0; Fire Protection Water – Charcoal Filters, Units 1 and 2; Revision 0

LRA-12-5152L-0; Fire Protection Water – System Details: Turbine Building and Service Building, Units 1 and 2; Revision 0

LRA-12-5152N-0; Fire Protection Water – System Detail: Yard Piping Auxiliary Building, Units 1 and 2; Revision 0

LRA-12-5152R-0; Fire Protection Water – Partial Plan and Miscellaneous Details for Site Buildings, Units 1 and 2; Revision 0

LRA-12-5152S-0; Fire Protection Water – Piping at North and South Storage Tanks, Units 1 and 2; Revision 0

LRA-12-5152T-0; Fire Protection Water – Piping in Pump House Floor, Elevation 598'-0", Units 1 and 2; Revision 0

LRA-12-5152U-0; Fire Protection – Fuel Oil Piping to Diesels in Fire Pump House; Revision 0

LRA-12-5153-0; Fire Protection – CO_2 17 Ton System Key Plan; Revision 0

LRA-12-5153A-0; Fire Protection – CO_2 Cardox Valve Details and Hose Reel Header Schematic, Units 1 and 2; Revision 0

LRA-12-5153K-0; Fire Protection – CO_2 Emergency Diesel and Fuel Oil Transfer Pump Room, Units 1 and 2; Revision 0

LRA-12-5153L-0; Fire Protection – CO_2 Control Room and Auxiliary Cable Vaults, Units 1 and 2; Revision 0

LRA-12-5154A-0; Halon Fire Protection, Units 1 and 2; Revision 0

LRA-1-5105-0; Main Steam, Unit 1; Revision 0

LRA-1-5105B-1; Main Steam, Unit 1; Revision 1

LRA-1-5105D-0; Steam Generating System, Unit 1; Revision 0

LRA-1-5105E-0; Main Steam, Unit 1; Revision 0

LRA-1-5106A-1; Aux-Feedwater, Unit 1; Revision 1

LRA-1-5110A-0; Drip Piping, Unit 1; Revision 0

LRA-1-5110B-0; Drip Piping, Unit 1; Revision 0

LRA-1-5113-0; Essential Service Water; Revision 0

LRA-1-5113A-0; Essential Service Water; Revision 0

LRA-1-5113B-0; Turbine Driven Auxiliary Feed Pump Room Coolers 1-HV-AFP-T1AC and 1-HV-AFP-T2AC; Revision 0

LRA-1-5113C-0; East and West Motor Driven Auxiliary Feed Pump Room Coolers 1-HV-AFP-EAC and 1-HV-AFP-WAC; Revision 0

LRA-1-5114A-0; Non-Essential Service Water; Revision 0

LRA-1-5120D-0; Containment Control Air – 85# and 50# Ring Headers, Unit 1; Revision 0

LRA-1-5120E-0; Containment Control Air – 85# and 50# Ring Headers, Unit 1; Revision 0

LRA-1-5120NN-0; Control Air System – Turbine Building Tapoffs, Unit 1; Revision 0

LRA-1-5120R-0; Control Air System – Auxiliary Bld. Tapoffs, Unit 1; Revision 0

LRA-1-5120S-0; Control Air System – Auxiliary Building Tapoffs, Unit 1; Revision 0

LRA-1-5120Y-0; 100# Control Air System Header – Diesel Generators AB and CD, Unit 1; Revision 0

LRA-1-5128-0; Reactor Coolant, Unit 1; Revision 0

LRA-1-5128A-0; Reactor Coolant, Unit 1; Revision 0

LRA-1-5129-0; Chemical and Volume Control System – Reactor Letdown and Charging, Unit 1; Revision 0

LRA-1-5129A-0; Chemical and Volume Control System – Reactor Letdown and Charging, Unit 1; Revision 0

LRA-1-5135A-0; Component Cooling Water Safety Related Loads; Revision 0

LRA-1-5135C-0; Component Cooling Water – Miscellaneous Services Auxiliary Building; Revision 0

LRA-1-5141-0; Nuclear Sampling; Revision 0

LRA-1-5142-0; Emergency Core Cooling (Safety Injection); Revision 0

LRA-1-5143-0; Emergency Core Cooling (Residual Heat Removal), Unit 1; Revision 0

LRA-1-5143A-0; Emergency Core Cooling (Residual Heat Removal) Accumulator Piping, Unit 1; Revision 0

LRA-1-5144-0; Containment Spray, Unit 1; Revision 0

LRA-1-5146B-0; Ice Condenser Refrigeration, Unit 1; Revision 0

LRA-1-5147-0; Containment Ventilation, Unit 1; Revision 0

LRA-1-5147A-0; Containment Ventilation; Revision 0

LRA-1-5151A-0; Emergency Diesel Generator AB, Unit 1; Revision 0

LRA-1-5151B-0; Emergency Diesel Generator AB, Unit 1; Revision 0

LRA-1-5151C-0; Emergency Diesel Generator CD, Unit 1; Revision 0

LRA-1-5151D-0; Emergency Diesel Generator CD, Unit 1; Revision 0

LRA-1-5152B-0; Fire Protection Water – Turbine Building and Screen House, Unit 1; Revision 0

LRA-1-5152J-0; Fire Protection Water – System Details: Turbine Building and Screen House, Unit 1; Revision 0

LRA-1-5153C-0; Fire Protection – CO_2 Reactor Cable Tunnel, Unit 1; Revision 0

LRA-1-5153E-0; Fire Protection – CO_2 Lower 4kV Areas, Unit 1; Revision 0

LRA-1-5153F-0; Fire Protection – CO_2 Upper 4kV (Switch Gear Cable Vault), Unit 1; Revision 0

LRA-2-5105B-0; Main Steam, Unit 2; Revision 0

LRA-2-5105D-0; Steam Generating System, Unit 2; Revision 0

LRA-2-5105E-0; Main Steam, Unit 2; Revision 0

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LRA-2-5113B-0; Turbine Driven Auxiliary Feedwater Pump Room Coolers; Revision 0

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LRA-2-5114A-0; Non-Essential Service Water; Revision 0

LRA-2-5120D-0; Containment Control Air – 85# and 50# Ring Headers, Unit 2; Revision 0

LRA-2-5120E-0; Containment Control Air – 85# and 50# Ring Headers, Unit 2; Revision 0

LRA-2-5120KK-0; Control Air System – Auxiliary Building Tapoffs, Unit 2; Revision 0

LRA-2-5120R-0; Control Air System – Auxiliary Building Tapoffs, Unit 2; Revision 0

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LRA-2-5120Y-0; 100# Control Air System Header – Diesel Generators AB and CD, Unit 2; Revision 0

LRA-2-5128A-0; Reactor Coolant, Unit 2; Revision 0

LRA-2-5129-0; Chemical and Volume Control System – Reactor Letdown and Charging, Unit 2; Revision 0

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LRA-2-5135A-0; Component Cooling Water Safety Related Loads; Revision 0

LRA-2-5135C-0; Component Cooling Water – Miscellaneous Services Auxiliary Building; Revision 0

LRA-2-5141-0; Nuclear Sampling; Revision 0

LRA-2-5142-0; Emergency Core Cooling (Safety Injection); Revision 0

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LRA-2-5152K-0; Fire Protection Water – System Details: Turbine Building and Screen House, Unit 2; Revision 0

LRA-2-5153D-0; Fire Protection – CO_2 Reactor Cable Tunnel, Unit 2; Revision 0

LRA-2-5153G-0; Fire Protection – CO_2 Lower 4KV Areas, Unit 2; Revision 0

LRA-2-5153H-0; Fire Protection – CO_2 Upper 4KV (Switchgear Cable Vault), Unit 2; Revision 0

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1-ESW-61; Isometric – Essential Service Water Piping to Auxiliary Feedwater Pump Rooms; Revision 11

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L-24988; Shell Details for Condensate Storage Tank; Revision 1

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LRP-PR-01; Final System and Structure Scoping Report; Revision 0

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LRP-ISSR -17; Auxiliary Building; Revision 1

LRP-ISSR-18; Auxiliary Feedwater System; Revision 2

LRP-ISSR-21; Auxiliary Steam System (AS); Revision 0

LRP-ISSR -31; Containment System; Revision 1

LRP-ISSR-38; Control Air; Revision 2

LRP-ISSR-40; Chemical and Volume Control System; Revision 1D

LRP-ISSR-41; Circulating Water; Revision 0

LRP-ISSR-47; Emergency Core Cooling System; Revision 1D

LRP-ISSR-48; Emergency Diesel Generators (EDG); Revision 1

LRP-ISSR-51; Essential Service Water; Revision 2

LRP-ISSR-52; Fire Protection; Revision 0

LRP-ISSR-53; Main Feed Water System; Revision 1

LRP-ISSR-54; Main Generator System (GEN); Revision 0

LRP-ISSR-55; Reactor Hydrogen (H2); Revision 0

LRP-ISSR-58; Ice Condenser System (ICE); Revision 0

LRP-ISSR-71; Miscellaneous Structures; Revision

LRP-ISSR-72; Main Steam; Revision 1

LRP-ISSR-75; Reactor Nitrogen (N2); Revision 1

LRP-ISSR-78; Non Essential Service Water; Revision 0

LRP-ISSR-82; Offsite Power; Revision 1

LRP-ISSR-90; Reactor Coolant System (RCS); Revision 1

LRP-ISSR-93; Radiation Monitoring System; Revision 1

LRP-ISSR-95; Reactor Vessel Level Indication System (RVLIS); Revision 0

LRP-ISSR-97; Screenwash; Revision 1

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LRP-ISSR-107; Auxiliary Building Ventilation; Revision 0

LRP-ISSR-108; Containment Ventilation; Revision 1

LRP-ISSR-115; Turbine Building Ventilation; Revision 1

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LRP-SAMR-03; Aging Management Review of the Auxiliary Building; Revision 1

LRP-SAMR-04; Aging Management Review of Yard Structures; Revision 4

LRP-SAMR-05; Aging Management Review of Bulk Commodities; Revision 1

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LRP-TR-03; SBO Topical Report; Revision 2

LRP-TR-04; FP Topical Report; Revision 2

LRP-TR-05; EQ Topical Report; Revision 1

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License Renewal Communication Plan - Program Guideline Documents

LRP-PG-01; Scoping Systems and Structures; Revision 5

LRP-PG-02; License Renewal Program Plan; Revision 1

LRP-PG-03; Structural Screening and Age Management Reviews; Revision 1

LRP-PG-04; Mechanical System Screening and Aging Management Reviews; Revision 0

LRP- PG-05; Electrical System Scoping; Screening and Age Management Review; Revision 0

LRP-PG-06; License Renewal Topical Reports; Revision 1

LRP-PG-07; Evaluation of Aging Management Programs; Revision 0

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LRP-PG-09; LRIS Use and Maintenance; Revision 0

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OP-1-98032; Diesel Generator 1AB, Excitation and Regulation and Miscellaneous Elementary Diagram; Revision 41

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OP-1-98214; Sheet 1, Motor Driven Auxiliary Feedwater Supply System Elementary Diagram; Revision 42

OP-1-98281; Sheet 1, Emergency Core Cooling (Safety Injection), Elementary Diagram; Revision 41

OP-2-98281; Sheet 1, Emergency Core Cooling (Safety Injection) Elementary Diagram; Revision 36

OP-2-982851; Sheet 2, Containment Spray System Elementary Diagram; Revision 7

PS-1-95301; Sheet 1, Emergency Diesel Generator "1AB" Wiring Diagram; Revision 16

LIST OF ACRONYMS USED

AFW	Auxiliary Feedwater
AMR	Aging Management Review
AMRR	Aging Management Review Report
AS	Auxiliary Steam
CLB	Current Licensing Basis
CNP	Cook Nuclear Plant
CRTLA	Control Air
CST	Condensate Storage Tank
CVCS	Chemical and Volume Control System
ECCS	Emergency Core Cooling System
EDG	Emergency Diesel Generator
EQ	Environmental Qualification
ESF	Engineered Safety Features
ESFAS	Engineered Safety Features Activation Systems
ESW	Essential Service Water
FP	Fire Protection
FRV	Feedwater Regulating Valve
FW	Main Feedwater
GALL	Generic Aging Lessons Learned
GEN	Main Generator
H2	Reactor Hydrogen
HDV	Heater Drains and Vents
I&C	Instrumentation and Control
ICE	Ice Condenser System
ISSR	Individual System/Structures Scoping Report
LOCA	Loss of Coolant Accident
LR	License Renewal
LRA	License Renewal Application
LTOP	Low Temperature Overpressure Protection
LTW	Lake Township Water
MS	Main Steam System
MSLB	Main Steam Line Break
N2	Reactor Nitrogen System
NESW	Non-Essential Service Water
NRC	Nuclear Regulatory Commission
NRR	Office of Nuclear Reactor Regulation
NSR	Non-Safety Related
RCP	Reactor Coolant Pump
RCS	Reactor Coolant System
RHR	Residual Heat Removal
RMS	Radiation Monitoring System
RVLIS	Reactor Vessel Level Instrumentation System
SBO	Station Blackout
SR	Safety Related
SSC	Systems, Structures, and Components
TLAA	Time Limiting Aging Analysis
UFSAR	Updated Final Safety Analysis Report
VAB	Auxiliary Building Ventilation
VCONT	Containment Building Ventilation
VCT	Volume Control Tank
VTB	Turbine Building Ventilation