UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET SW SUITE 23T85
ATLANTA, GEORGIA 30303-8931

September 28, 2001

Duke Energy Corporation
ATTN: Mr. G. R. Peterson
Site Vice President
Catawba Nuclear Station
4800 Concord Road
York, SC 29745

SUBJECT: CATAWBA NUCLEAR STATION - NRC INSPECTION REPORT 50-413/01-08, 50-414/01-08

Dear Mr. Peterson:

On August 10, 2001, the NRC completed a triennial fire protection inspection at your Catawba Nuclear Station, Units 1 and 2. The enclosed report documents the results of this inspection which were discussed on August 9 and September 20, 2001, with you and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, no findings of significance were identified.

In accordance with 10 CFR 2.790 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/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Charles R. Ogle, Chief
Engineering Branch 1
Division of Reactor Safety

Docket Nos.: 50-413, 50-414
License Nos.: NPF-35, NPF-52

Enclosure: (See page 2)

Enclosure: NRC Inspection Report 50-413, 414/01-08
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U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No:	50-413, 50-414
License No:	NPF-35, NPF-52
Report No:	50-413/01-08, 50-414/01-08
Licensee:	Duke Energy Corporation
Facility:	Catawba Nuclear Station, Units 1 and 2
Location:	4800 Concord Road York, SC 29745
Dates:	August 6, 2001 - September 20, 2001
Inspectors:	D. Billings, Resident Inspector, Oconee C. Smith, P.E., Senior Reactor Inspector M. Thomas, Senior Reactor Inspector (Lead Inspector) G. Wiseman, Senior Reactor Inspector
Approved by:	C. Ogle, Chief Engineering Branch 1 Division of Reactor Safety

Enclosure

SUMMARY OF FINDINGS

IR 05000413-01-08, IR 05000414-01-08, on 08/06 - 09/20/2001, Duke Energy Corporation, Catawba Nuclear Station, Units 1 and 2. Triennial fire protection baseline inspection.

The inspection was conducted by a team of regional and resident inspectors. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at http://www.nrc.gov/NRR/OVERSIGHT/index.html. No findings of significance were identified.

Report Details

1. REACTOR SAFETY
Cornerstones: Initiating Events, Mitigating Systems

1R05 FIRE PROTECTION

.01 Systems Required To Achieve and Maintain Post-Fire Safe Shutdown

a. Inspection Scope

The team used the licensee's individual plant examination for external events (IPEEE) to select five risk significant fire areas. The team reviewed the IPEEE, Safe Shutdown Analysis (SSA), associated procedures, and system drawings to identify those systems credited for safe shutdown (SSD) of the facility in the event of a fire in the selected fire areas. The inspection included review of the post-fire safe shutdown capability and the fire protection features to ensure that at least one post-fire SSD success path was maintained free of fire damage in the event of a fire as defined in the Branch Technical Position (BTP) Chemical Engineering Branch (CMEB) Section 9.5-1 and 10 CFR 50 Appendix R. For each of the fire areas selected, the team focused its inspection on the fire protection features, and the structures, systems, and components (SSCs) necessary to achieve and maintain SSD conditions. Applicable fire protection related licensing documents and plant design output documents were reviewed to verify that the shutdown methodology had properly identified and included those SSCs necessary to achieve and maintain safe shutdown. The documents reviewed included the Updated Final Safety Analysis Report (UFSAR) Sections 7.4 and 9.5.1; NRC Safety Evaluation Report (SER) and SER Supplements (SSER) 2, 3, 4, and 5; Fire Hazards Analysis (FHA); SSA; various piping and instrumentation drawings (P&IDs); design basis documents (DBDs); electrical one-line drawings; cable routing data; plant monitoring instrumentation; and plant fire area drawings. The objective of these reviews was to ensure that the post-fire safe shutdown analytical approach, safe shutdown equipment, and procedures were consistent and complied with the Appendix R reactor performance criteria for safe shutdown (i.e., reactivity control, reactor coolant makeup, reactor heat removal, process monitoring, and support system functions), and the SSD components were physically separated from the fire area. The fire areas selected for inspection included the following:

- Fire Area 3, Unit 1 Motor Driven Auxiliary Feedwater (CA) Pump Room: A fire in this area would involve shutdown of Unit 1 from the standby shutdown facility (SSF) utilizing equipment in the standby shutdown system (SSS).

- Fire Area 9, Unit 2 Battery Room and Vital Instrumentation and Control (I&C) Room: A fire in this area would involve shutdown of Unit 2 from the SSF utilizing the SSS.

- Fire Area 11, Auxiliary Building General Area and Unit 1 Component Cooling Water (KC) Pump Room: This is a common area. A fire in this area would involve shutdown of the unit from the SSF utilizing the SSS.

- Fire Area 14, Unit 2 Train A 4160 Volt Switchgear Room: A fire in this area would involve shutdown of Unit 2 from the main control room (MCR) utilizing Train B equipment.

- Fire Area 21, Main Control Room: The control room is common and shared between Unit 1 and Unit 2. A fire in this area would involve shutdown from the SSF utilizing the SSS.

b. Findings

SSER 4, Section 9.5.1.5, General Plant Guidelines, Safe Shutdown Capability, stated that the licensee's analysis identified nine plant areas where a fire could damage redundant divisions of normal plant safe shutdown systems and instrumentation. Alternative shutdown using the SSS was credited as the means to ensure safe shutdown for both units following a fire in either one of the nine plant areas. Licensee personnel stated that the nine plant areas represented 12 fire areas for Units 1 and 2. Appendix A of the Catawba SSA (CNS-1435.00-00-0002, Design Basis Specification for Post Fire Safe Shutdown, Revision 10) identified 31 fire areas where alternative shutdown using the SSS was credited as the designated safe shutdown method. The team questioned the difference between the SSA and SSER 4 regarding the number of fire areas which credited safe shutdown using the SSS (i.e., 19 additional fire areas which credited alternative shutdown). The team noted that SSER 4 was issued in December 1984 and the SSA was issued in November 1992.

The change in the number of fire areas (from 12 to 31) which credited alternative shutdown using the SSS as the designated safe shutdown method was a change to the approved fire protection program and licensing basis for Catawba. SSER 4 did not identify nor approve these 19 additional fire areas as alternative shutdown. Based on SSER 4, these 19 fire areas were considered to be in compliance with BTP CMEB Section 9.5-1, paragraph C.5.b(2) for ensuring that one of the redundant trains was free of fire damage. The licensee's identification of these 19 fire areas as alternative shutdown areas in accordance with BTP CMEB Section 9.5-1, paragraph C.5.b(3), meant that redundant trains of safe shutdown equipment were not ensured to be free of fire damage and a fire in one of these 19 fire areas could damage redundant trains of normal plant safe shutdown systems and equipment. During further review of this issue, the team noted that the licensee had not performed evaluations (in accordance with the guidance in NRC Generic Letter (GL) 86-10, Implementation of Fire Protection Requirements, dated April 24, 1986) for the 19 fire areas not approved in SSER 4 which credited alternative shutdown. The 19 fire areas not addressed in SSER 4 included the following:

Fire Area 20 - Electrical Penetration Room (Unit 1)
Fire Area 22 - General Auxiliary Building Area (Common)
Fire Area 23 - Fuel Storage Area (Unit 2)
Fire Area 24 - Fuel Storage Area (Unit 1)
Fire Area 25 - Diesel Generator 1A Room (Unit 1)
Fire Area 26 - Diesel Generator 1B Room (Unit 1)
Fire Area 27 - Diesel Generator 2A Room (Unit 2)
Fire Area 28 - Diesel Generator 2B Room (Unit 2)

Fire Area 29 - Train A RN Pump Room (Common)
Fire Area 30 - Train B RN Pump Room (Common)
Fire Area 38 - Fuel Storage Area HVAC Room (Unit 1)
Fire Area 41 - Diesel Generator 1A Sequencer Tunnel (Unit 1)
Fire Area 42 - Diesel Generator 1B Sequencer Tunnel (Unit 1)
Fire Area 43 - Diesel Generator 2A Sequencer Tunnel (Unit 2)
Fire Area 44 - Diesel Generator 2B Sequencer Tunnel (Unit 2)
Fire Area 45 - Cable Room Corridor (Common)
Fire Area 47 - Fuel Storage Area HVAC Room (Unit 2)
Fire Area 50 - Outer Doghouse (Unit 2)
Fire Area 51 - Outer Doghouse (Unit 1)

The team also noted that the licensee did not meet the guidance in GL 86-10 for fire areas designated as alternative or dedicated shutdown, in that, a fixed suppression system was not installed in 15 of the 19 fire areas. The four fire areas which met the fixed suppression requirements were the four diesel generator rooms (Fire Areas 25, 26, 27, and 28), which had an automatic carbon dioxide (CO_2) system. The licensee did not indicate that there were approved exemption requests for not having fixed suppression in the other 15 fire areas.

During further discussions, the licensee stated that the fire areas in question were included in their FHA, which was submitted to the NRC for review prior to the issuance of SSER 4. The team noted that the FHA was not included in the referenced licensee letters reviewed for Section 9.5.1.5, Safe Shutdown Capability, of SSER 4. The licensee's correspondence which submitted the original FHA was not available for review by the team. The licensee did not provide the team with sufficient documentation which demonstrated that evaluations were performed for the changes to the approved fire protection program and licensing basis for Catawba.

The team noted that a similar question regarding changing a fire area from being compliant with BTP CMEB Section 9.5-1, paragraph C.5.b(2) to an alternate shutdown area per BTP CMEB Section 9.5-1, paragraph C.5.b(3), was identified by the NRC during a baseline triennial fire protection inspection of another licensee. This question was currently being evaluated for acceptability under a Task Interface Agreement (TIA) by the NRC's Office of Nuclear Reactor Regulation (NRR). The team informed the licensee that this was unresolved and will be tracked as Unresolved Item (URI) 50-413,414/2001-08-01, Changes to the Approved Fire Protection Program for Areas Designated as Alternative Shutdown. This item is unresolved pending NRC review to determine (1) which fire areas designated as alternative shutdown in the SSA were approved by SSER 4; (2) if the additional fire areas meet the criteria for alternative shutdown (i.e., fixed suppression); and (3) if the NRR resolution of the related TIA is applicable to Catawba.

.02 Fire Protection of Safe Shutdown Capability

a. Inspection Scope

The team reviewed the Catawba FHA (Part B of CNS-1465.00-00-0006, Plant Design Basis Specification for Fire Protection, Revision 3) and administrative fire

prevention/combustible fire hazards control procedures to determine if they satisfied the objectives established by the NRC-approved fire protection program. The team walked down the selected plant fire areas to observe the licensee's implementation of these procedures for limiting fire hazards. The team also reviewed design control procedures to verify that plant changes were adequately reviewed to assess the potential impact on the fire protection program and the safe shutdown equipment and procedures.

The team performed field walk downs and reviewed the adequacy of separation and fire protection features provided for power, control, and instrumentation cabling of safe shutdown components to verify compliance with the separation requirements of BTP CMEB 9.5-1.

The team reviewed the drawings and design specification of the reactor coolant pump (RCP) oil collection system enclosures to assess their ability to collect any oil leakage and spray from the oil lift system, oil cooler and upper oil pot, and the lower bracket and pump area in accordance with the requirements of BTP CMEB 9.5-1, Position C.7.a, "Primary and Secondary Containment." The team also reviewed the RCP operational procedures to determine if sufficient procedural guidance was provided to the plant operators so they would be able to identify an oil leak from the lubrication system of one of the RCP motors and take appropriate action.

The team performed a walk down of the primary fire brigade dress-out building to assess the condition of fire fighting equipment. Fire brigade fire fighting and personal protective equipment was reviewed to evaluate equipment accessibility and functionality. The team also assessed whether backup emergency lighting was provided for access pathways to and within the fire brigade staging areas and dress-out building in support of fire brigade operations should a power failure occur from any cause during a fire emergency. The fire brigade self-contained breathing apparatuses (SCBAs) were reviewed for adequacy, as well as the availability of supplemental breathing air tanks. Team members also performed walk downs of the selected fire areas and compared associated fire fighting pre-plan procedures and drawings with as-built plant conditions to verify that they were consistent with the fire protection features and potential fire conditions described in the FHA.

The team reviewed the fire brigade response procedure and fire brigade training and drill program procedures. Operating shifts' fire drill critiques for 2001 and fire brigade training/drill records were reviewed to verify that fire brigade drills had been conducted in the high fire risk plant areas and that the fire brigade personnel qualifications, brigade drill response, and brigade performance met the requirements of the licensee's approved fire protection program.

Additionally, the team reviewed flow diagrams and flooding analysis calculations associated with the auxiliary building and CA pump room floor drain system to verify that systems and operator actions required for post-fire safe shutdown would not be inhibited by leakage or flooding from fire suppression activities or rupture of fire suppression systems.

b. Findings

No findings of significance were identified.

.03 Post-Fire Safe Shutdown Circuit Analysis

a. Inspection Scope

The team reviewed electrical schematics of safe shutdown equipment and analyzed the control circuits to evaluate the potential effects of open circuits, shorts to ground and hot shorts. Additionally, information contained on the as-built cable installation data sheet was evaluated in order to verify that safe shutdown equipment cables were not routed in the fire areas of interest.

The team reviewed the licensee's breaker/fuse coordination analysis for a sample of safe shutdown equipment with the electrical distribution system configured for operation from the SSF diesel generator in order to verify proper breaker/fuse selective coordination.

b. Findings

No findings of significance were identified.

.04 Alternative Shutdown Capability

a. Inspection Scope

The team reviewed the licensee's procedures for fire response and alternative shutdown (ASD) capability for the fire areas selected to verify conformance with BTP CMEB 9.5-1. Selected portions of the procedures were walked down to verify that the procedures could be performed within the required times, given the minimum required staffing level of operators, concurrent with a loss of offsite power. The team reviewed the licensee's smoke control procedures, ventilation systems, and SCBA availability to verify that smoke would not prevent operators from performing the procedures.

The team reviewed the electrical isolation and protective fusing in the transfer circuits of selected components (e.g., motor operated valves and solenoid operated valves) required for post-fire safe shutdown from the SSF to verify that the safe shutdown components were physically and electrically separated from the fire areas. The team evaluated the capability for transferring control from the MCR to the SSF to verify that this capability was not affected by fire induced faults. The team's review also included verifying that SSD equipment could be powered from both onsite and offsite power. Portions of completed surveillance test procedures were reviewed for the auxiliary shutdown panels and the SSF to establish whether the licensee conducted periodic operational tests of the alternative shutdown transfer capability and instrumentation and control functions.

b. Findings

No findings of significance were identified.

.05 Operational Implementation Of Alternative Shutdown Capability

a. Inspection Scope

The team reviewed the operational implementation of the ASD capability for a fire in the selected fire areas to verify that: (1) the training program for licensed personnel included alternative or dedicated safe shutdown capability; (2) personnel required to achieve and maintain the plant in hot standby from outside the MCR could be provided from normal onsite staff, exclusive of the fire brigade; and (3) the licensee periodically performed operability testing of the SSD instrumentation and transfer and control functions. The team reviewed the contents of damage control kits to verify that equipment needed to implement the transfer from hot standby to cold shutdown was being properly maintained. Fire brigade staffing was reviewed to verify compliance with the Technical Specifications (TS). The team reviewed the training requirements for the fire brigade leader, fire brigade members, and related support personnel such as nuclear control operators (NCOs), senior control operators (SCOs), and security officers to verify compliance with the licensee's fire protection program. The team reviewed lesson plans and job performance measures (JPMs) to verify that ASD activities were included in the training program.

b. Findings

No findings of significance were identified.

.06 Communications for Performance of Alternative Shutdown Capability

a. Inspection Scope

The team reviewed the various communications systems (e.g., sound powered phones, plant paging, two-way radios) to verify that they were adequate to support plant personnel in the performance of alternative safe shutdown functions and fire brigade duties. The team reviewed the adequacy of the pagers and radio communication systems utilized by the fire brigade to verify that the licensee's fire protection features would protect the radio repeaters. The team also reviewed the periodic testing of the safe shutdown sound-powered phone system to assess whether the surveillance test program for the sound-powered phones was sufficient to verify proper operation of the system. The team walked down selected remote shutdown equipment in the auxiliary building and SSF to verify that the safe shutdown sound-powered phone jacks were in good condition, free of foreign material, and installed at the proper locations to support required shutdown actions identified in the procedures. The team also reviewed the inventory surveillance of post fire safe shutdown communications equipment to verify equipment availability

b. Findings

No findings of significance were identified.

.07 Emergency Lighting for Performance of Alternative Shutdown Capability

a. Inspection Scope

The team reviewed the design, operation, and manufacturer's data sheets on the installed individual direct current (DC) emergency lighting system self-contained, battery powered units to verify that battery power supplies were rated with at least an 8-hour capacity as required by Section III. J of Appendix R. The team performed a walk down of the remote shutdown equipment to verify that emergency lighting units (ELUs) were operational and the lamp heads were aimed to provide adequate illumination to perform the shutdown actions required by the procedures. The team reviewed the emergency lighting in the selected fire areas to verify that it was adequate for the access and egress pathways to the required safe shutdown equipment. The team also reviewed periodic test and maintenance procedures and documents to determine if adequate surveillance testing was in place to ensure operation of the ELUs in the event of a fire.

b. Findings

No findings of significance were identified.

.08 Cold Shutdown Repairs

a Inspection Scope

The team reviewed existing procedures and equipment to verify that the licensee had dedicated repair procedures, equipment, and materials to accomplish repairs of damaged components required for cold shutdown, that these components could be made operable, and that cold shutdown could be achieved within time frames specified under the SRP. The review was also performed to verify that the repair equipment, components, tools, and materials were available on site.

b. Findings

No findings of significance were identified.

.09 Fire Barriers and Fire Area/Zone/Room Penetration Seals

.091 Fire Area Enclosures and Penetration Seals

a. Inspection Scope

The team reviewed the selected fire areas to evaluate the adequacy of the fire resistance of fire area barrier enclosure walls, ceilings, floors, cable coatings, structural steel support protection, fire barrier penetration seals, fire doors, and fire dampers. The review was performed to ensure that at least one train of safe shutdown equipment was

free of fire damage. The team observed the material condition and configuration of the installed fire barrier features, as well as, reviewed construction details and supporting fire endurance tests for the installed fire barrier features. The team compared the observed in-situ seal configurations to the design drawings and tested configurations. The team also compared the penetration seal ratings with the ratings of the barriers in which they were installed. The team also reviewed the fire loading calculations to verify that the fire loading used by the licensee was appropriate for determining the fire resistive rating of the fire barrier enclosures.

The team reviewed remote shutdown procedures, selected pre-fire strategy plans, and flow diagrams associated with heating ventilation and air conditioning (HVAC) systems to verify that remote shutdown equipment and operator manual actions would not be inhibited by smoke migration from one fire area to adjacent plant areas used to accomplish safe shutdown.

In addition, the team reviewed the licensing documentation, engineering evaluations of fire barrier features, and engineering evaluations for National Fire Protection Association (NFPA) code deviations to verify that the fire barrier installations met design requirements and license commitments.

b. Findings

No findings of significance were identified.

.092 Electrical Raceway Fire Barrier Systems Used to Protect Safe Shutdown Capability

a. Inspection Scope

The team reviewed the design and qualification testing for electrical raceway fire barriers and performed a walk down of installed barriers for the selected fire areas to verify compliance with applicable NRC requirements.

b. Findings

Fire protection features required to satisfy General Design Criterion (GDC) 3, “Fire Protection,” included features to ensure that one train of those systems necessary to achieve and maintain safe shutdown conditions be maintained free of fire damage. One means for complying with this requirement was to separate one safe shutdown train from its redundant train with fire-rated barriers. The level of fire resistance required (i.e., 1-hour or 3-hours) depended on the other fire protection features provided in the fire area of concern.

The NRC issued guidance on acceptable methods of satisfying the regulatory requirements of GDC 3 in BTP Auxiliary and Power Conversion Systems Branch (APCSB) 9.5-1, "Guideline for Fire Protection for Nuclear Power Plants;" Appendix A to BTP APCSB 9.5-1; BTP CMEB 9.5-1 "Fire Protection for Nuclear Power Plants," July 1981: GL 86-10, “Implementation of Fire Protection Requirements,” April 24, 1986; and Supplement 1 to GL 86-10, “Fire Endurance Test Acceptance Criteria for Fire Barrier

Systems Used To Separate Redundant Safe Shutdown Trains Within the Same Fire Area," March 25, 1994.

The team noted that, in the event of an unmitigated fire in the Unit 1 motor driven CA pump room, Fire Area 3, the licensee's SSA credited shutdown from the SSF utilizing SSS equipment, which included the Unit 1 turbine driven CA pump. At Catawba, Hemyc fire wrap material was utilized to protect selected raceways to meet the circuit separation and protection requirements of BTP CMEB 9.5.1, Positions C.5.b and C.5.c. In Fire Area 3, the licensee's SSA indicated that the Unit 1 motor driven CA pumps and cables for both the Train A and Train B pumps are located within the fire area. Additionally, the turbine driven CA pump power and control circuits are not routed independent of Fire Area 3. Within the fire area selected for inspection, Hemyc was installed to protect 19 cables in Fire Area 3. The licensee was unable to provide the team with a documented engineering evaluation which demonstrated that an adequate design basis had been established for fire protection cable wrap fire barrier system (which incorporated the guidance of GL 86-10) to ensure that the shutdown capability was protected. An exposure fire in this area, would result in fire damage to all feedwater capability should the fire wrap material fail to perform its designed 1-hour fire barrier protection function.

The team noted that the Hemyc installations inspected at Catawba were in good condition. However, the NRC has previously identified Hemyc qualification test issues at the Shearon Harris Nuclear Power Plant (IR 50-400/99-13 and NRR TIA 99-028, dated November 23, 1999). An industry/NRC initiative is ongoing to resolve the issues with the material tests. This issue is identified as URI 50-413, 414/2001-08-02, Adequacy of Hemyc Cable Wrap Fire Barrier Qualification Tests and Evaluations for Installed Configurations. This issue had been previously entered in the licensee's corrective action program under Problem Investigation Process (PIP) C-01-00427 to track NRC and industry developments associated with Hemyc fire barrier systems. This issue is unresolved pending further NRC review to determine whether the qualification tests of the Hemyc fire barrier wrap systems are acceptable.

.10 Fire Protection Systems, Features, and Equipment

a. Inspection Scope

The team reviewed flow diagrams, cable routing information, periodic test procedures, engineering evaluations for NFPA code deviations, and operational valve lineup procedures associated with the electric fire pumps and fire protection water supply system. The review was to determine whether the common fire protection water delivery and supply components could be damaged or inhibited by fire-induced failures of electrical power supplies or control circuits. Additionally, team members performed a walk down of the electric fire pumps and portions of fire protection water supply system in the selected areas to assess the material condition, operational effectiveness, and whether the installed configurations were within the parameters of the engineering evaluations.

The team reviewed the fire protection features to verify adequate installation in accordance with the separation and design requirements of BTP CMEB Section 9.5-1, Positions C.5 and C.6. The team walked down accessible portions of the fire detection and alarm systems in the selected fire areas to evaluate the engineering design and operation of the installed configurations. The team also reviewed engineering drawings for the detection, design, spacing criteria, and detector locations for the installed detection systems in the selected fire areas to verify effectiveness of the systems and compliance with the licensee's UFSAR and associated NFPA Code of Record. The team reviewed the carbon dioxide (CO_2) fire suppression systems to assess the adequacy of the design and installation for the motor driven/turbine driven CA pump areas and the partial coverage automatic sprinkler systems located in fire areas 3, 9, and 11. Team members performed a walk down of the selected areas to assure proper placement and spacing of CO_2 nozzles and sprinkler heads and the lack of sprinkler head obstructions. Design calculations were reviewed to verify that the required fire hose water flow and sprinkler system density for each protected area was available. The team reviewed a sample of manual fire hose lengths to verify that they could reach the safe shutdown equipment. The team also reviewed the fire brigade pre-fire plans to determine if the design and placement of the manual fire fighting fire hose equipment and fire extinguishers were properly reflected in the pre-fire plans. The team reviewed CO_2 fire suppression system controls to assure accessibility and functionality of the system and associated ventilation system fire dampers. Licensee design calculations, vendor certifications, and pre-operational test data were reviewed to determine if the required quantity of CO_2 for the areas was available.

b. Findings

No findings of significance were identified.

.11 Compensatory Measures

a. Inspection Scope

The team reviewed existing fire protection and safe shutdown SSCs which were identified as degraded or unavailable against the fire protection and SSD program administrative controls. The review was performed to verify that the risk associated with removing fire protection and/or post-fire systems or components was properly assessed and adequate compensatory measures were implemented in accordance with the approved fire protection program.

b. Findings

No findings of significance were identified.

.12 Identification and Resolution of Problems

a. Inspection Scope

The team reviewed selected licensee audits, assessments, and PIPs to verify that items related to fire protection and safe shutdown were appropriately entered into the

licensee's corrective action program in accordance with the licensee's quality assurance program and procedural requirements. The team also reviewed the licensee's administrative fire protection impairment and surveillance procedures, Selected Licensee Commitments, the 2000-2001 fire impairments log, corrective maintenance work orders for fire protection and safe shutdown equipment. The items selected were reviewed for classification, prioritization, and appropriateness of the corrective actions taken or initiated to resolve the items.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA6 Meetings

.01 Exit Meeting Summary

The lead inspector presented the inspection results to Mr. G. Peterson, Site Vice President, and other members of licensee management and staff at the conclusion of the inspection on August 9, 2001. Subsequent to the onsite inspection, the licensee provided additional information to the team for review. A followup call was held with Mr. G. Strickland, and other licensee staff members on September 20, 2001, to discuss the inspection results. The licensee acknowledged the findings presented. No proprietary information is included in this report.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

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D. Brandes, Fire Protection Engineer, General Office
J. Brisson, Operations
D. Caldwell, Civil Supervisor, MCE
K. Caldwell, Power Systems Supervisor, Reactor and Electrical Systems Engineering (RES)
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G. Gilbert, Regulatory Compliance Manager
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T. Jackson, Regulatory Compliance Specialist
J. Kammer, Balance of Plant Systems Supervisor, MCE
G. Peterson, Catawba Site Vice President
G. Strickland, Regulatory Compliance Specialist
R. Sweigart, Safety Assurance Manager

NRC

D. Roberts, Senior Resident Inspector

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-413,414/2001-08-01	URI	Changes to the Approved Fire Protection Program for Areas Designated as Alternative Shutdown (Section 1R05.01.b)
50-413,414/2001-08-02	URI	Adequacy of HEMYC Cable Wrap Fire Barrier Qualification Tests and Evaluations for Installed Configurations (Section 1R05.092.b)

Closed

None

Discussed

None

LIST OF ACRONYMS USED

APCSB	Auxiliary and Power Conversion Systems Branch
ASD	Alternative Shutdown
BTP	Branch Technical Position
CA	Auxiliary Feedwater
CFR	Code of Federal Regulations
CMEB	Chemical Engineering Branch
CO_2	Carbon Dioxide
DBD	Design Basis Document
DC	Direct Current
ELU	Emergency Lighting Unit
FHA	Fire Hazards Analysis
GDC	General Design Criterion
GL	Generic Letter
HVAC	Heating Ventilation and Air Conditioning
I&C	Instrumentation and Controls
IPEEE	Individual Plant Examination of External Events
JPM	Job Performance Measure
KC	Component Cooling Water
MCE	Mechanical and Civil Engineering
MCR	Main Control Room
NCO	Nuclear Control Operator
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
NRR	Nuclear Reactor Regulation
P&ID	Piping and Instrumentation Drawing
PIP	Problem Investigation Process
RCP	Reactor Coolant Pump
RN	Nuclear Service Water
SCBA	Self Contained Breathing Apparatus
SCO	Senior Control Operator
SDP	Significance Determination Process
SER	Safety Evaluation Report
SRP	Standard Review Plan
SSA	Safe Shutdown Analysis
SSC	Systems, Structures, and Components
SSD	Safe Shutdown
SSER	Supplement to the Safety Evaluation Report
SSF	Standby Shutdown Facility
SSS	Standby Shutdown System
TIA	Task Interface Agreement
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
URI	Unresolved Item
V	Volt

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