

MEMORANDUM TO: Pao-Tsin Kuo, Program Director  
License Renewal and Environmental Impacts Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Martin J. Farber, Inspection Team Leader  
Division of Reactor Safety  
Region III

FROM: Stuart A. Richards, Chief  
Inspection Program Branch  
Office of Nuclear Reactor Regulation

Cynthia D. Pederson, Director  
Division of Reactor Safety  
Region III

SUBJECT: DRESDEN-QUAD CITIES LICENSE RENEWAL INSPECTIONS

Attached is the final version of the Dresden-Quad Cities Nuclear Power Station License Renewal Inspection Plan. The plan, which was developed jointly by NRR and Region III, is hereby approved. You are directed to use this plan to prepare and conduct the license renewal inspections at Dresden and Quad Cities.

/Signed by/  
Stuart A. Richards, Chief  
Inspection Program Branch  
Division of Inspection Program Management  
Office of Nuclear Reactor Regulation

Date: June 12, 2003

/Signed by Roy J. Caniano for/  
Cynthia D. Pederson, Director  
Division of Reactor Safety  
Region III

Date: June 3, 2003

Attachments: Dresden-Quad Cities License Renewal Inspection Plan

MEMORANDUM TO: Pao-Tsin Kuo, Program Director  
License Renewal and Environmental Impacts Program  
Division of Regulatory Improvement Programs  
Office of Nuclear Reactor Regulation

Martin J. Farber, Inspection Team Leader  
Division of Reactor Safety  
Region III

FROM: Stuart A. Richards, Chief  
Inspection Program Branch  
Office of Nuclear Reactor Regulation

Cynthia D. Pederson, Director  
Division of Reactor Safety  
Region III

SUBJECT: DRESDEN-QUAD CITIES LICENSE RENEWAL INSPECTIONS

Attached is the final version of the Dresden-Quad Cities Nuclear Power Station License Renewal Inspection Plan. The plan, which was developed jointly by NRR and Region III, is hereby approved. You are directed to use this plan to prepare and conduct the license renewal inspections at Dresden and Quad Cities.

/Signed by/  
Stuart A. Richards, Chief  
Inspection Program Branch  
Division of Inspection Program Management  
Office of Nuclear Reactor Regulation

Date: June 12, 2003

/Signed by Roy J. Caniano for/  
Cynthia D. Pederson, Director  
Division of Reactor Safety  
Region III

Date: June 3, 2003

Attachments: Dresden-Quad Cities License Renewal Inspection Plan

Distribution: See next page

\*See previous concurrences

DOCUMENT NAME: C:\ORPCheckout\FileNET\ML031671252.wpd

OFFICE	LA:RLEP:DRIP	PM:RLEP:DRIP	TL:RIII
NAME	EHylton for Y Edmunds*	H Wang*	M Farber*
DATE	06/ 4 /03	06/ 4 /03	06/ 3 /03
OFFICE	SC:RLEP:DRIP	D:DRP:RIII	BC:IIPB:DIPM
NAME	S Lee*	R Caniano for C Pederson*	S Richards
DATE	06/ 5 /03	06/ 3 /03	06/12/03

OFFICIAL RECORD COPY

DISTRIBUTION: Dresden-Quad Cities License Renewal Inspection, Dated: June 12, 2003

**RLEP RF**

TJ Kim

HWang

# **DRESDEN-QUAD CITIES LICENSE RENEWAL INSPECTION PLAN**

## **I PURPOSE**

This inspection plan specifies methods for implementing Manual Chapter 2516 requirements for activities relating to 10 CFR Part 54 (herein after referred to as “the rule”) and the Dresden-Quad Cities (D/Q) license renewal inspection program. This plan defines the scope of the inspections planned to verify that D/Q’s license renewal program is in compliance with the requirements of the rule and is consistent with Exelon Nuclear (Exelon’s) license renewal application (LRA) and the staff’s safety evaluation of Exelon’s LRA. The plan also provides guidance for inspection scheduling, inspector training, inspection activities, and resource requirements.

Exelon Nuclear’s LRA identified the systems and structures that Exelon determined were within the scope of the rule. The enclosures to this plan lists the systems and structures selected for this inspection. The inspection team chose the items, after reviewing the scoping results provided in D/Q’s LRA, on the basis of their risk significance, uniqueness to D/Q, and current issues. The scope and depth of inspections of these systems and structures may vary.

## **II OBJECTIVES**

The overall objective of this plan is to provide guidance for inspecting the implementation and effectiveness of the programs and activities associated with Exelon’s license renewal program. The inspection will verify that there is reasonable assurance that the effects of aging will be adequately managed so that the intended function(s) of structures and components (SCs), for which an aging management review is required, will be maintained consistent with the current licensing basis (CLB) during the period of extended operation. Region III will implement the license renewal inspection plan (LRIP) at D/Q before NRR approves Exelon’s LRA to verify that Exelon meets the requirements of the rule and has implemented license renewal programs and activities consistent with the rule, the LRA, and the staff’s safety evaluation report (SER) on the LRA.

## **III INSPECTION ACTIVITIES**

Each inspector will receive basic LRIP training. The inspectors will receive additional training on the D/Q LRA and the staff’s safety evaluation of the LRA. The training will be given before the inspections.

Inspection Procedure (IP) 71002, “License Renewal Inspections,” will be the primary procedure used to inspect Exelon’s implementation of the requirements of the rule. The latest revision of IP 71002 can be reviewed by accessing <http://www.nrc.gov/reading-rm/doc-collections/inspection-manual/inspection-procedure/ip-71002.pdf>

1. The systems and structures groups to be inspected are identified in the enclosures of this plan. The selection of these systems and structures is based on risk significance and the importance of the safety function performed. The inspection team will verify that Exelon has implemented the scoping and screening process consistent with the rule and Exelon's methodology, as described in the LRA submitted by letter dated January 3, 2003. The inspection team will also inspect a sample of the systems and structures listed in the enclosures that Exelon concluded were not within the scope of the rule, in order to verify that there is reasonable assurance that all systems and structures within the scope of 10 CFR 54.4 have been identified.
2. The implementation of the screening activities required under 10 CFR 54.21(a)(1) will be inspected by reviewing system boundaries on plant drawings, intended functions, and the active/passive and short-/long-lived characteristics of the SCs listed in the enclosures to this plan, within the scope of Exelon's aging management review.
3. The inspection team will also walk down accessible portions of the systems and structures to identify any observable inconsistencies in the scoping and screening activities and any aging effects on the systems and structures that are not covered in the LRA. Aging effects identified by Exelon will be reviewed and evaluated during the NRR technical review. The inspection team will perform a sample audit of related maintenance records of the systems and structures listed in the enclosures to attempt to identify any previously unrecognized aging.
4. The inspection team will inspect the aging management programs (AMPs), including AMPs where Exelon asserts they are consistent with the Generic Aging Lessons Learned (GALL) report, for approximately half of the aging effects in each of the systems and structures listed in the enclosures. The inspection team will examine records for existing aging management programs to evaluate the programs' effectiveness and will review plans for new aging management programs. The inspection team will then document its findings on the effectiveness of the aging management programs to maintain the systems' and structures' intended function(s) consistent with the CLB for the period of extended operation.

#### **IV INSPECTION SCOPE**

The D/Q license renewal inspection activities will be implemented through two or three site inspections.

1. The first inspection will last one week or longer, if necessary, and focus on the scoping and screening processes to verify that they have been implemented consistent with the rule, Exelon's methodology, and the staff's safety evaluation of Exelon's methodology. This inspection should be performed after the staff has completed its safety evaluation of the scoping and screening methodology, but before the SER is issued. The inspection will verify that there is reasonable assurance that Exelon's scoping and screening processes have identified all of the systems, structures, and components for which an aging management review is required consistent with the requirements of the rule.

2. In the second inspection, the team will spend one week at Dresden, return to the region for one week to review documents, begin to write the inspection report, adjust the inspection plan, and then spend a week at Quad Cities. This inspection will examine existing and proposed aging management programs and past results. To support the NRR review process, the report for the second inspection will be issued before the "SER with open items" is issued.
3. If the Regional Administrator decides that open inspection items from the first two inspections warrant a third inspection, the team will follow up on previous inspection activities and inspect Exelon actions on any SER open items requested by NRR. This inspection will also focus on any portion of the LRA updated by the applicant as a result of recent plant modifications. The third inspection report will document the need for any future follow-up inspections.

## V INSPECTION RESOURCES

The inspection will need the following inspection resources:

1. Inspectors
  - One team leader
  - One regional electrical inspector
  - One regional mechanical (in-service inspection) inspector
  - One regional mechanical (systems) inspector
  - One regional mechanical/structural (piping and support) inspector
  - One or more support staff from the program office
2. Skills

The inspection team needs a cross-section of skills, including mechanical, material, civil, and electrical engineering skills.

The scope of the third inspection (and, thus, the resources) will depend on how many open issues remain from the previous inspection activities.

## LICENSE RENEWAL SCOPING RESULTS FOR MECHANICAL SYSTEMS

System Name	Dresden In-Scope?	Quad Cities In-Scope?
Reactor vessel (2.3.1.1)	Yes	Yes
Reactor internals (2.3.1.2)	Yes	Yes
Reactor vessel head vent system(2.3.1.3.2)	Yes	Yes
Nuclear boiler instrumentation system (2.3.1.3.3)	Yes	Yes
Head spray system (Dresden only) (2.3.1.3.4)	Yes	N/A
High pressure coolant injection system (2.3.2.1)	Yes	Yes
Core spray system (2.3.2.2)	Yes	Yes
Containment isolation components and primary containment piping system (2.3.2.3)	Yes	Yes
Residual heat removal system (2.3.2.6)	N/A	Yes
Low pressure coolant injection system (2.3.2.7)	Yes	N/A
Automatic depressurization system (2.3.2.10)	Yes	Yes
Anticipated transients without scram system (2.3.2.11)	Yes	Yes
Shutdown cooling system (2.3.3.2)	Yes	N/A
Control rod drive hydraulic system (2.3.3.3)	Yes	Yes
Fire protection system (2.3.3.5)	Yes	Yes
Emergency diesel generator and auxiliaries (2.3.3.6)	Yes	Yes
HVAC – Main control room (2.3.3.7)	Yes	Yes
HVAC – Reactor building (2.3.3.8)	Yes	Yes
Station blackout system (diesels and auxiliaries) (2.3.3.11)	Yes	Yes
Diesel fuel oil system (2.3.3.13)	Yes	Yes
Service water system (2.3.3.16)	Yes	Yes
Containment cooling service water system (2.3.3.21)	Yes	N/A
Ultimate heat sink (2.3.3.22)	Yes	Yes
Fuel pool cooling and filter demineralizers system (2.3.3.23)	Yes	No
Nitrogen containment atmosphere dilution system (2.3.3.26)	Yes	Yes
Drywell nitrogen inerting system (2.3.3.27)	Yes	Yes
Floor and equipment drain collection system and liquid radwaste system	No	No

Reactor building floor and equipment drain system	No	No
Oxygen injection – hydrogen addition system	No	No
Hypochlorite (Chemical addition)	No	No
Instrument air and drywell pneumatic supply system	No	No
HVAC – Primary containment	No	No
Dresden Unit 1 gaseous monitoring	No	N/A
Security diesel, distribution and auxiliaries	No	No
Condensate and condensate storage system (2.3.4.3)	Yes	Yes
Extraction steam system	No	No



## LICENSE RENEWAL SCOPING RESULTS FOR STRUCTURES

Structure Name	Dresden In-Scope?	Quad Cities In-Scope?
Primary containment (2.4.1)	Yes	Yes
Reactor building (secondary containment) (2.4.2)	Yes	Yes
Turbine buildings (2.4.4)	Yes	Yes
Dresden Unit 2/3 Diesel generator and HPCI building (2.4.5)	Yes	N/A
Quad Cities diesel generator room (2.4.5)	N/A	Yes
Station blackout building (2.4.6)	Yes	Yes
Radwaste floor drain surge tank and foundation (2.4.9)	Yes	Yes
Diesel oil storage tanks foundation (2.4.10)	Yes	Yes
Contaminated condensate storage tanks foundation (2.4.10)	Yes	Yes
Crib house (2.4.11)	Yes	Yes
Dresden Unit 1 crib house (2.4.12)	Yes	N/A
Station chimney (2.4.13)	Yes	Yes
Miscellaneous radwaste buildings	No	No
Miscellaneous Dresden Unit 1 structures	No	N/A
Miscellaneous transmission and distribution structures	No	No

**LICENSE RENEWAL SCOPING RESULTS FOR  
ELECTRICAL/I&C SYSTEMS**

System Name	Dresden In-Scope?	Quad Cities In-Scope?
Reactor protection system	Yes	Yes
Reactor manual control system	Yes	Yes
4160 V switchgear and distribution	Yes	Yes
480 V motor control centers, transformer switchgear and distribution	Yes	Yes
DC emergency lighting	Yes	Yes
Essential service bus	Yes	Yes
120/240 VAC instrument bus	Yes	Yes
250 VDC system	Yes	Yes
125 VDC system	Yes	Yes
Transformers (Main, Unit, Reserve and Standby)	Yes	Yes
24/48 VDC system	No	No
12 & 34 KV distribution	No	N/A
13.8 KV distribution	N/A	No
120 VAC distribution, lighting and receptacles	No	No