

Exelon Generation Company, LLC  
Dresden Nuclear Power Station  
6500 North Dresden Road  
Morris, IL 60450-9765

www.exeloncorp.com

10 CFR 50.4  
10 CFR 50.59

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U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Dresden Nuclear Power Station, Units 1, 2, and 3  
Facility Operating License No. DPR-2  
Renewed Operating License Nos. DPR-19 and DPR-25  
NRC Docket Nos. 50-010, 50-237 and 50-249

Subject: 10 CFR 50.59 Report

Enclosed is the report of completed changes, tests, and experiments in accordance with 10 CFR 50.59, "Changes, tests, and experiments," paragraph (d)(2) for Dresden Nuclear Power Station (DNPS). These evaluations use the criteria identified in 10 CFR 50.59 for determining whether a proposed change, test, or experiment shall require NRC approval prior to implementation of the proposed activities.

Should you have any questions regarding this report, please contact Mr. James Ellis, Regulatory Assurance Manager at (815) 416-2800.

Respectfully,



Danny G. Bost  
Site Vice President  
Dresden Nuclear Power Station

Enclosure

cc: Regional Administrator – Region III  
NRC Senior Resident Inspector – Dresden Nuclear Power Station

## 10 CFR 50.59 Safety Evaluation Summary Report

Safety Evaluation      1998-03-226H    Type of Safety Evaluation: Exempt Change  
Evaluation Reference      P12-3-94-212

Title                      MSIV 3-0203-2A Liner Upgrade

Description:            Upgrade the internals of MSIV 3-0203-2A by replacing the upper and lower guide liner. This activity is to be performed per EC P12-3-94-212. This EC was issued in 1995. It contained a safety evaluation, which was prepared and reviewed in accordance with DAP 10-02, Revision 10. The proposed work activity has not changed. This Form H evaluation is being issued to document the validity of that original safety evaluation. Validation of previous safety evaluation for EPC P12-3-94-212 dated 6/2/95.

Result:                    This evaluation determined that prior NRC approval was not required.

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Safety Evaluation      1999-02-073    Type of Safety Evaluation: Modification  
Evaluation Reference      DCP 9600209

Title                      Oscillation Power Range Monitor (OPRM)

Description:            The activity consists of the installation of an Oscillation Power Range Monitor (OPRM), Class 1E, microprocessor based system and required additional supporting instrumentation. OPRM is intended to detect regional core oscillations, to which some BWRs are susceptible in high power and low coolant flow conditions and to protect the fuel. Once the OPRM is armed, after one fuel cycle, it will automatically suppress the oscillations.

Result:                    This evaluation identified the need to create a new Technical Specification.

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Safety Evaluation      1999-03-130    Type of Safety Evaluation: Modification  
Evaluation Reference      DCP 9600210

Title                      Install Oscillation Power Range Monitor (OPRM)

Description:            The activity consists of the installation of an Oscillation Power Range Monitor (OPRM), Class 1E, microprocessor based system and required additional supporting instrumentation. OPRM is intended to detect regional core oscillations, to which some BWRs are susceptible in high power and low coolant flow conditions and to protect the fuel. Once the OPRM is armed, after a planned one fuel cycle, it will automatically suppress the oscillation.

Result:                    This evaluation identified the need to create a new Technical Specification.

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## 10 CFR 50.59 Safety Evaluation Summary Report

Safety Evaluation      2000-03-089,R3      Type of Safety Evaluation: Modification  
Evaluation Reference DCPs 9900428, 613, 616,  
617

Title                      EPU Project Installation of Condensate Prefiltration System

Description:            These modifications perform the following proposed activities for each unit:

1. Install an inline condensate pre-filtration system downstream of the condensate pumps and upstream of the steam jet air ejectors. The pre-filtration system will consist of two filter vessels, piping and valves including bypass lines isolation valves and valving required for operation air receiver tank/compressor, backup instrument air connection, filter pack removal system, backwash wastewater disposal system, pre-filter and backwash tanks system shielding, new control panel, bridge crane/monorail and hoist. Two manual 3/4" pre-filter vessel fill valves with portable connectors are located in the pre-filter vessel dome vent lines. Seven instrument root valves with test connections are included to simplify maintenance activities. The new pre-filtration is controlled by local PLC. A section of one inch pipe for the condensate pump room wet pipe sprinkler system will be rerouted to avoid interference with the bridge crane/monorail and hoist. The pre-filtration system will reduce the amount of iron and insoluble impurities in the condensate system upstream of the existing demineralizers. This will decrease condensate demineralizer cleaning frequencies, making the overall system more reliable and decreasing radwaste volume.
2. Install a bypass line to bypass 1/7 of condensate flow in parallel with the existing condensate demineralizer system 100% bypass valve. Extended power uprate operation will require all seven demineralizers to be in service except for maintenance. The condensate demineralizer 1/7 bypass flow valve will allow the condensate flow for one of seven demineralizers to be bypassed around the six demineralizers remaining in service when the seventh is isolated for resin cleaning or replacement. The 1/7 bypass valve is then slowly closed such that the remaining six demineralizers can process 100% of the condensate system flow without transient flow and sudden pressure changes that could cause crud breakthrough, flow channeling and/or resin damage.
3. Replace the existing condensate demineralizer post strainer internal baskets with more efficient baskets. The new baskets will reduce the differential pressure across the demineralizer system while maintaining the existing mesh size.

Result:                    This evaluation determined that prior NRC approval was not required.

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## 10 CFR 50.59 Safety Evaluation Summary Report

Safety Evaluation 2000-03-091      Type of Safety Evaluation: Modification  
Evaluation Reference      DCP 9900421, 9900615

Title      MSL Flow Switch Replacement for Power Uprate

Description:      To support power uprate, the Main Steam Line (MSL) flow will be increased. GE EPU Task T0100, Nominal Reactor Heat Balance, revised the Unit 2 analytical limit (AL) to 125% of rated flow and the Unit 3 AL to 140% of rated flow. This requires a new MSL High Flow Differential Switch Setpoint. Calculation NED-I-EIC-0095 was revised to support EPU and revises the setpoints for Unit 2 and Unit 3. The calculated setpoints required for EPU exceeded the range of the current switches. To accommodate the new setpoint, the existing switches are being replaced. The replacement switches are the manufacturer's recommended replacement for the existing devices and have a range of 0-400 psid.

These switches are part of the Primary Containment Isolation System (PCIS) and close the Main Steam Isolation Valves (MSIVs) in the event of high MSL flow. The new switches are procured as safety related and are environmentally and seismically qualified for their installed location. The mounting method of the new switches is similar to that of the existing switches. The mounting details and existing instrument racks have been analyzed for seismic structural impact as a result of the switch replacement and are acceptable. The PCIS interface, function and method of operation of the new switches is the same as that of the devices that are being replaced.

Result:      This evaluation identified the need for NRC authorization to increase power operation of Dresden 2 & 3.

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Safety Evaluation      2000-04-112H      Type of Safety Evaluation: Modification  
Evaluation Reference      DCP 9900709

Title      Install Third ISFSI Storage Pad

Description:      Install a third ISFSI storage pad near the existing ISFSI pads in accordance with DCP 9900709. The design change includes installation of the following ISFSI facility SSCs:

1. A reinforced concrete foundation (cask storage pad) with the capacity to store up to 14 HI-STAR 100 or HI-STORM 100 spent fuel storage casks in any combination.
2. A prepared area surrounding the cask.
3. An electrical grounding system for each cask.
4. A concrete turning pad for the cask transporter.

Several interferences will be removed or relocated for installation of the pad. These interferences include two security lights that will be removed, one security light that will be relocated and 480-volt power cables/ground cable that will be relocated.

Result:      This evaluation determined that prior NRC approval was not required.

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Safety Evaluation 2000-04-114 Type of Safety Evaluation: Modification  
Evaluation Reference DCP 9800404

Title Replace U2 Reactor High Pressure Trip Switches with Rosemount Analog Trip System

Description: The existing Barksdale Reactor Vessel High Pressure scram switches Will be replaced with Rosemount pressure transmitters that will utilize an analog trip unit and a Master Trip relay to interface with the existing Reactor Protection System (RPS) logic. One transmitter, one trip unit, and one Master Trip relay will be required for each channel. Wiring for each pressure transmitter will utilize spare conductors in existing cables. As required, these cables are routed in separate conduits for each channel.

The pressure transmitters will be seismically mounted on instrument racks 2202-5 and 2202-6 in the same physical locations of the old pressure switches. These instrument racks are located in the reactor building. The 4-20 mAdc outputs of the pressure transmitters will be wired using existing cables and junction boxes that are also located in the reactor building. From these junction boxes, the 4-20 mAdc outputs will continue to the Analog Trip Panels located in the Turbine Building where they will be connected to the trip units and relays.

The Master Trip Units and relays are located in the Turbine Building in Analog Trip Cabinets 2202 - 73A and B. The Master Trip Units will be installed into existing are card racks and screwed into place. The Master Trip relay sockets will be seismically mounted within the applicable RPS relay enclosures within the panels. The Agastat relays will installed into these sockets and secured by mounting straps. The trip units will receive the 4-20 mAdc signal and convert it into a voltage from 1 to 5 volts for display. The trip units also incorporate a setpoint and bistable output, which provide 24Vdc to the Trip relay coils. The relay coils will deenergize on reactor high pressure and open their contacts.

The normally open contacts from the Master Trip (Agastat) relays will be wired with existing cables to the Main Control Room Reactor Protection System Logic Panels 902-15 (Trip system A) and 902-17 (Trip System B). Since the Agastat relays are energized during normal plant operation, the contacts are closed within their RPS trip circuits. An open contact from either Reactor Vessel High Pressure channel or loss of power will produce a half scram. If two contacts open one from each trip system, a full scram will occur.

The proposed modification will correct the license and design basis discrepancies identified in Design Change Package 950071 modified the Low Reactor Water Level Channels by replacing the trip switches with level transmitters and providing the level signals to the analog trip system to generate the RPS trip signal. This modification inadvertently reduced the required number of reactor trip channels from four to two by applying the ECCS design requirements instead of the RPS design requirements. This resulted in installation of both RPS sub channels of a single trip system within the same analog trip panel without providing the required isolation and

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separation. Thereby creating a condition where a single failure can affect both trip channels of a single trip system preventing a reactor scram on low level from occurring when required. This modification reconfigures the ATS panels such that only one trip channel from each trip system is located with a single ATS panel. This is accomplished by rerouting the trip channels into the ATS panels and providing the required divisional separation and isolation of the RPS channels in accordance with the license and design basis requirements for RPS.

**Result:** This evaluation identified the need to change the Technical Specifications in accordance with the licensing topical report requirements of NEDO-21617-1.

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Safety Evaluation      2004-03-004      Type of Safety Evaluation: Miscellaneous  
Evaluation Reference      EC Eval 349879

**Title**      Dresden 3B Reactor Recirculation Pump Motor and Rotating Element Move

**Description:** This activity involves the rigging and movement of heavy loads (greater than 800 lbs) in the Unit 3 Drywell, and the Unit 2 and Unit 3 Reactor Buildings. The existing 3B pump motor and rotating element are being removed and replaced. The travel paths encompass the Unit 2 Equipment hatch, the refuel floor, the Unit 3 equipment hatch and the Unit 3.

**Result:** Activity can be implemented per plant procedures without obtaining a License Amendment.

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Safety Evaluation      2005-02-001      Type of Safety Evaluation: Miscellaneous  
Evaluation Reference      CR 173612

**Title**      Crediting the Isolation Condenser and Control Rod Drive Systems for Safe Shutdown

**Description:** This activity will change the systems credited with safe shutdown following a HPCI high energy line break (HELB) in the HPCI room from strictly safety-related systems to a combination of safety-related and non-safety-related systems. Specifically, the isolation condenser will be credited for decay heat removal (in lieu of ADS and LPCI/CCSW) and the control rod drive hydraulic system will be credited for reactor coolant inventory control (in lieu of LPCI).

**Result:** Activity can be implemented per plant procedures without obtaining a License Amendment.



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Safety Evaluation      2005-03-007      Type of Safety Evaluation: FSAR Change  
Evaluation Reference      EC358235

Title      CS performance requirement, design feature and procedure change due to CS line crack

Description:      During D2R19 inspection, additional crack indication on Core Spray (CS) line was identified. GE has evaluated the Core Spray leakage flow due to as-found additional crack indication. The GE assessment is documented in GE report DRF 0000-0047-9761, dated 11/17/05. Exelon Nuclear Fuels (NF) has performed the owner acceptance review and approved the GE assessment of Dresden Unit 2 Core Spray (CS) line crack leakage and its impact on LOCA analysis Licensing Basis Peak Clad Temperature (PCT). The review concludes that the CS line additional crack indication has no effect on performance requirement, design features and procedures that need to be considered by the Dresden Station and implemented as necessary.

Result:      Activity can be implemented per plant procedures without obtaining a License Amendment.

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Safety Evaluation      2005-04-001      Type of Safety Evaluation: Procedure  
Evaluation Reference      SP-05-05-005 Rev. 2

Title      U3 Condensate Prefilter Bypass Valve Throttling

Description:      This Activity is a 50.59 Safety Evaluation of Special Procedure SP-05-05-005: "U3 Condensate Prefilter Bypass Valve Throttling" Revision 0. This Special Procedure is a test \ experiment that will demonstrate successful operation of the Unit 3 Condensate\Feedwater system with a greater percentage of the condensate passing through the partial-flow condensate prefilter system. EC 357650 Revision 0 states that throttling the prefilter bypass valves up to 30% to achieve a maximum flow of 5000 gpm through each prefilter will not adversely impact the probability of the loss of feedwater transient as described in the UFSAR. Implementing this SP will not increase the probability or severity of design basis accident scenarios described in the UFSAR. This Activity does not more than minimally increase the frequency of the transients and/or accident scenarios described in the UFSAR. This Activity will not create a new accident scenario not previously considered in the UFSAR.

Result:      Activity can be implemented per plant procedures without obtaining a License Amendment.

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## 10 CFR 50.59 Safety Evaluation Summary Report

Safety Evaluation 2006-01-001 Type of Safety Evaluation: Modification

Evaluation Reference EC 356598

Title RX BLDG OPENING & REPLACEMENT SIDING & PERMANENT ENCLOSURE - U3 SDR

Description: This 50.59 review covers a permanent configuration change under Engineering Change (EC) Package, EC 356598, which is associated with the Steam Dryer Replacement Project at Dresden Nuclear Generating Station. This EC involves the removal of a section of the Reactor Building (RB) siding, associated structural hardware, and a section of the adjacent curb. An exterior door (alternate secondary containment boundary) will be installed at the siding opening, along with temporary flashing and sheet metal sealing panels. Following Steam Dryer Replacement Project activities, the siding associated structural hardware and the concrete angle will be restored. This EC also provides for the installation of semi-permanent hardware that will be used to anchor a temporary enclosure per related ECs (EC 356597, EC 357521, EC 358849) to the refueling floor.

Result: Activity can be implemented per plant procedures without obtaining a License Amendment.

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Safety Evaluation 2006-08-001 Type of Safety Evaluation: Modification

Evaluation Reference EC 356823

Title Replacement of Steam Dryer - Unit 3

Description: The proposed activity will replace the existing Dresden Unit 3 RPV Steam Dryer Assembly with a new assembly of a modified and more structurally robust design. The new dryer assembly is designed in accordance with ASME Section NG (Core Support Structure) stress criteria as appropriate to withstand the analytically and empirically determined loading associated with operation at Extended Power Uprate (EPU) conditions. The new design utilizes longer dryer vane modules with integrated perforated plates. The perforated plate design added to the existing assembly as part of EPU implementation is being eliminated. The new dryer design includes solid gussets between the dryer banks, tied beam structures top and bottom, increased skirt / outer hood thicknesses, material change to type 304L or 316L stainless steel and an extension of the dryer skirt. The new steam dryer assembly will be mounted on to the existing dryer support brackets.

Result: Activity can be implemented per plant procedures without obtaining a License Amendment.

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## 10 CFR 50.59 Safety Evaluation Summary Report

Safety Evaluation      2006-12-001      Type of Safety Evaluation: FSAR Change  
Evaluation Reference      UFSAR Change 06-028

Title      UFSAR Change 06-028

Description:      This change will remove the following statement from UFSAR Section 11.2.2.2.16 "Floor Drain Surge Tank": "The tank is equipped with electric heaters to prevent freezing during cold weather".

Result:      Activity can be implemented per plant procedures without obtaining a License Amendment.

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Safety Evaluation      2007-01-001      Type of Safety Evaluation: Temporary Alteration  
Evaluation Reference      TCCP EC 364232

Title      Temporary Configuration Change to Install an Enclosure Over SBLC Leak at TS 2-1155 Bushing

Description:      This Temporary Configuration Change will install a temporary enclosure over a leaking bushing on the Standby Liquid Control (SBLC) Tank. The enclosure will be fabricated from standard pipe and/or fittings and then welded to the coupling on the SBLC Tank. This bushing is used to mount Temperature Switch, TS 2-1155 into the side of the SBLC Tank. In order to install the temporary enclosure, TS 2-1155 will be removed from its thermo-well and will be temporarily rendered non-functional. TS 2-1155 will be de-termed and the existing flex cable will be remaining in place for later re-installation.

Result:      Activity can be implemented per plant procedures without obtaining a License Amendment.

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