

Part 21 (PAR)

Event # 48042

<b>Rep Org:</b> ROSEMOUNT NUCLEAR INSTRUMENTS, INC.		<b>Notification Date / Time:</b> 06/21/2012 15:03 (EDT)	
<b>Supplier:</b> ROSEMOUNT NUCLEAR INSTRUMENTS, INC.		<b>Event Date / Time:</b> 06/14/2012 (CDT)	
<b>Last Modification:</b> 06/21/2012			
<b>Region:</b> 3	<b>Docket #:</b>		
<b>City:</b> CHANHASSEN	<b>Agreement State:</b>	Yes	
<b>County:</b>	<b>License #:</b>		
<b>State:</b> MN			
<b>NRC Notified by:</b> JEFF CHIVERS		<b>Notifications:</b> DANIEL HOLODY	R1DO
<b>HQ Ops Officer:</b> DONG HWA PARK		ALAN BLAMEY	R2DO
<b>Emergency Class:</b> NON EMERGENCY		JULIO LARA	R3DO
<b>10 CFR Section:</b>		GEOFFREY MILLER	R4DO
21.21(d)(3)(i) DEFECTS AND NONCOMPLIANCE		PART 21 GRP BY EMAIL	

## PART 21 - RELIABILITY DEGRADATION OF RESISTORS IN TRIP UNITS AND READOUT ASSEMBLIES

"Certain 710DU Trip Units may not perform their intended safety function as a result of certain wire wound precision resistors experiencing a degradation of reliability. Additionally, certain 710DU Readout Assemblies used to calibrate 710DU Trip Units may experience degraded digital display accuracy during calibration due to a similar cause. Rosemount Nuclear Instruments, Inc. does not have complete information relating to specific plant applications and therefore cannot determine the potential effects of the condition on plant operation.

"This notification affects certain Model 710DU Trip Units and certain 710DU Readout Assemblies shipped from Rosemount Nuclear Instruments, Inc between March 16, 2005 and May 10, 2012."

The shipments were distributed to Ginna, Nine Mile Point, Fermi, Columbia Generating Station, Fitzpatrick, River Bend Station, Grand Gulf, Quad Cities, Peach Bottom, LaSalle, Limerick, Dresden, Perry, Hope Creek, Hatch, Brunswick, Browns Ferry, and Monticello.

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JE19  
NR

21 June 2012

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

**Re: Notification under 10 CFR Part 21 on certain Rosemount Model 710DU Trip Units and 710DU Readout Assemblies**

Pursuant to 10 CFR Part 21, section 21.21(b), Rosemount Nuclear Instruments, Inc. (RNII) is writing to inform you that certain 710DU Trip Units may not perform their intended safety function as a result of certain wirewound precision resistors experiencing a degradation of reliability. Additionally, certain 710DU Readout Assemblies used to calibrate 710DU Trip Units may experience degraded digital display accuracy during calibration due to a similar cause.

Rosemount Nuclear Instruments, Inc. does not have complete information relating to specific plant applications and therefore cannot determine the potential effects of the condition on plant operation.

This notification affects certain Model 710DU Trip Units and certain 710DU Readout Assemblies shipped from RNII between March 16, 2005 and May 10, 2012.

**1.0 Name and address of the individual providing the information:**

Mr. Marc D. Bumgarner  
Vice President & General Manager  
Rosemount Nuclear Instruments, Inc.  
8200 Market Boulevard  
Chanhassen, MN 55317

**2.0 Identification of items supplied:**

Certain 710DU Master and Slave Trip Units, as well as certain 710DU Readout Assemblies shipped from RNII between March 16, 2005 and May 10, 2012. See the enclosed Appendix A for the list of units shipped by customer and/or plant site.

**3.0 Identification of firm supplying the item:**

Rosemount Nuclear Instruments, Inc.  
8200 Market Boulevard  
Chanhassen, MN 55317

**4.0 Nature of the failure and potential safety hazard:**

710DU Master and Slave Trip Units use wirewound precision resistors in various circuit applications, including the following qualified safety functions: 4 to 20mA loop current sense, RTD resistance input bridge, trip point comparator, voltage regulation, and circuit power-up. Non-qualified circuit functions include gross failure comparator, gross failure

output, and analog meter indication. 710DU Readout Assemblies use wirewound resistors in digital display circuitry used to calibrate 710DU Master and Slave Trip Units.

RNII has recently identified an increased failure rate of wirewound resistors during manufacturing testing, as well as an increase in field returns resulting from wirewound resistor failures. Through third party testing and consultation with the manufacturer of the wirewound resistors, it has been determined that certain manufacturing lots may be more prone to premature failure. Circuit card assemblies using resistors from the suspect manufacturing lots were assembled into 710DU product and shipped from RNII between March 16, 2006 and May 10, 2012. Additionally, five 710DU Master Trip Units were shipped from RNII between March 16, 2005 and June 14, 2010 following a resistor replacement process that used resistors from the suspect manufacturing lots.

The suspected cause of reduced reliability is the use of aggressive flux with higher chlorine content during the supplier's resistor manufacturing process. In certain cases, the flux can penetrate the resistor end cap and corrode the resistive wire element. The failure mode typically experienced is an electrically "open" condition. However, additional failures have been identified by RNII where the resistance value may drift outside of the specified tolerance interval.

RNII has evaluated resistor applications in the 710DU product family for the potential impact of an electrically "open" failure mode as well as for a drift in resistance. These conditions may cause the following situations:

#### **710DU Master and Slave Trip Units**

- **Qualified Safety Function**
  - Drift in the 710DU trip point setting.
  - Drift in the 710DU trip reset differential setting.
  - Failure of the trip logic to activate. In this case, though a trip condition exists, trip output would not change state.
  - Inadvertent activation of the trip logic.
  - Failure of the 710DU Master or Slave Trip Unit to power up from a de-energized state.
- **Non-Qualified Function**
  - Drift in the 710DU high gross fail setting or low gross fail setting.
  - Failure of the high gross fail or low gross fail logic to activate. In this case, though a gross failure condition exists the gross failure output would not be activated.
  - Inadvertent gross failure indication.
  - Inaccurate or off-scale reading of the 710DU Master Trip Unit analog indicating meter.

### **710DU Readout Assembly**

- Degradation of the accuracy of the 710DU Readout Assembly digital display. This condition may result in errors during trip point calibration of the 710DU Master and Slave Trip Unit.

As a result of the above analysis, RNII determined on June 14, 2012 that a substantial safety hazard may exist for 710DU Master and Slave trip units and 710DU Readout Assemblies, and is therefore issuing this notification.

#### **5.0 The corrective action which is taken, the name of the individual or organization responsible for that action, and the length of time taken to complete that action:**

- (a) RNII has scrapped all inventories of the suspect resistor manufacturing lots.
- (b) RNII has worked with the resistor manufacturer to verify that a less aggressive flux is in use and appropriate manufacturing process changes have been implemented to prevent reoccurrence of this issue.
- (c) RNII has required the resistor manufacturer to conduct additional reliability screening on all future manufacturing lots shipped for use in RNII products.
- (d) RNII has increased manufacturing burn in time from 48 to 100 hours for all 710DU Trip Units and 710DU Readout Assemblies to provide increased detectability of resistor reliability concerns.

Mr. Marc Bumgarner, VP&GM of Rosemount Nuclear Instruments, Inc. is responsible for any further action related to this issue.

#### **6.0 Any advice related to the potential failure of the item:**

RNII recommends that users review the application where any of the potentially affected Model 710DU Trip Units or Readout Assemblies are used to determine any safety considerations in the operation of the plant. RNII can provide the following information to address potentially affected product:

#### **For 710DU Master and Slave Trip Units affected by this notification**

- As of June 14, 2012, approximately 2.5% of 710DU Master and Slave Trip Units shipped between March 16, 2006 and May 10, 2012 have been returned to RNII due to confirmed wirewound resistor failures.
- Master and Slave Trip Units can be returned to RNII at the customer's discretion and suspect wirewound resistors will be replaced with resistors manufactured and screened as outlined in section 5.0.
- Alternatively, RNII will provide a kit of resistors manufactured and screened as outlined in section 5.0 to allow customers to replace the resistors.

**For 710DU Readout Assembly units affected by this notification**

- RNII has not confirmed any field failures of 710DU Readout Assemblies manufactured between March 16, 2006 and May 10, 2012 that were a result of wirewound resistor failures.
- Readout assemblies can be returned to RNII at the customer's discretion and suspect wirewound resistors will be replaced with resistors manufactured and screened as outlined in section 5.0.

Rosemount Nuclear Instruments, Inc. is committed to the nuclear industry and remains dedicated to the supply of high quality products to our customers. If you have any questions, or require additional information related to this issue, please contact: Mike Dougherty (208) 865-1112 or Tracy Kaluzniak (952) 949-7159.

Sincerely,



Marc D. Bumgarner  
Vice President & General Manager  
Rosemount Nuclear Instruments, Inc.

Enc.: Appendix A – List of Affected 710DU Master and Slave Trip Units and 710DU Readout Assemblies by Company Name and/or Plant Site

**APPENDIX A: 10 CFR PART 21 NOTIFICATION - 21 JUNE 2012****CONSTELLATION ENERGY GROUP**

<b>PURCHASE ORDER NUMBER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>SHIP DATE</b>	<b>SITE</b>	<b>RNII SALES ORDER</b>
6606785	710DU1TT44051	539080	29-Apr-09	GINNA NUCLEAR POWER PLANT	2269995
7718089	710DU0TS	541134	16-Mar-10	NINE MILE POINT NUCLEAR STATION	2506386
7718089	710DU0TS	541135	16-Mar-10	NINE MILE POINT NUCLEAR STATION	2506386
7718089	710DU0TS	541136	16-Mar-10	NINE MILE POINT NUCLEAR STATION	2506386
7718089	710DU0TS	541137	16-Mar-10	NINE MILE POINT NUCLEAR STATION	2506386
7718089	710DU0TS	541204	6-Apr-10	NINE MILE POINT NUCLEAR STATION	2506386
7722154	710DU0TS	543828	18-May-11	NINE MILE POINT NUCLEAR STATION	3035200
7722154	710DU0TS	543829	18-May-11	NINE MILE POINT NUCLEAR STATION	3035200
7722154	710DU0TT45171	543891	18-May-11	NINE MILE POINT NUCLEAR STATION	3035200
7722154	710DU0TT45171	543892	18-May-11	NINE MILE POINT NUCLEAR STATION	3035200
7722154	710DU0TT43016	543893	18-May-11	NINE MILE POINT NUCLEAR STATION	3035200
7722154	710DU0TT43016	543894	18-May-11	NINE MILE POINT NUCLEAR STATION	3035200
7722154	710DU0TT37156	544072	8-Jun-11	NINE MILE POINT NUCLEAR STATION	3035200
7722154	710DU0TT37156	544073	8-Jun-11	NINE MILE POINT NUCLEAR STATION	3035200

**APPENDIX A: 10 CFR PART 21 NOTIFICATION - 21 JUNE 2012****DETROIT EDISON CO**

<b>PURCHASE ORDER NUMBER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>SHIP DATE</b>	<b>SITE</b>	<b>RNII SALES ORDER</b>
NM-388901	710DU0TT27000	527013	12-Dec-03	FERMI PLANT	1225541
NM-388901	710DU0TT27000	527102	6-Jan-04	FERMI PLANT	1225541
4700155721	710DU0TT27000	537367	12-Sep-08	FERMI PLANT	2172228
4700155721	710DU0TT27000	537368	12-Sep-08	FERMI PLANT	2172228
4700155721	710DU0TT27000	537369	12-Sep-08	FERMI PLANT	2172228
4700155721	710DU0TT27000	537370	12-Sep-08	FERMI PLANT	2172228
4700155721	710DU0TT27000	537371	12-Sep-08	FERMI PLANT	2172228
4700183721	710DU0TR27000	538379	19-Dec-08	FERMI PLANT	2231827
4700226599	710DU0TT27000	539254	9-Jun-09	FERMI PLANT	2329889
4700253478	710DU0TT27000	539894	9-Sep-09	FERMI PLANT	2403447
4700253478	710DU0TT27000	539967	22-Sep-09	FERMI PLANT	2403447
4700253478	710DU0TT27000	539968	22-Sep-09	FERMI PLANT	2403447
4700253478	710DU0TT27000	539969	22-Sep-09	FERMI PLANT	2403447
4700253478	710DU0TT27000	539970	22-Sep-09	FERMI PLANT	2403447

**APPENDIX A: 10 CFR PART 21 NOTIFICATION - 21 JUNE 2012****ENERGY NORTHWEST**

<b>PURCHASE ORDER NUMBER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>SHIP DATE</b>	<b>SITE</b>	<b>RNII SALES ORDER</b>
00327926 REV 001	710DU0TT45059	538869	13-Mar-09	COLUMBIA GENERATING SYSTEM	2281215
00327926 REV 001	710DU0TT45059	538870	13-Mar-09	COLUMBIA GENERATING SYSTEM	2281215
00327926 REV 001	710DU0TT45059	538871	13-Mar-09	COLUMBIA GENERATING SYSTEM	2281215
00327926 REV 001	710DU0TT45059	538872	13-Mar-09	COLUMBIA GENERATING SYSTEM	2281215
00327926 REV 001	710DU0TS	538878	13-Mar-09	COLUMBIA GENERATING SYSTEM	2281215
00327926 REV 001	710DU0TS	538879	13-Mar-09	COLUMBIA GENERATING SYSTEM	2281215
00327926 REV 001	710DU0TS	538880	13-Mar-09	COLUMBIA GENERATING SYSTEM	2281215
00327926 REV 001	710DU0TS	538881	13-Mar-09	COLUMBIA GENERATING SYSTEM	2281215
333286	710DU0TS	543451	26-Apr-11	COLUMBIA GENERATING SYSTEM	3051192
333286	710DU0TT45059	543452	26-Apr-11	COLUMBIA GENERATING SYSTEM	3051192
333286	710DU0TT45059	544304	30-Jun-11	COLUMBIA GENERATING SYSTEM	3051192
333286	710DU0TS	544323	30-Jun-11	COLUMBIA GENERATING SYSTEM	3051192



# APPENDIX A: 10 CFR PART 21 NOTIFICATION - 21 JUNE 2012

## ENTERGY CORP

PURCHASE ORDER NUMBER	MODEL NUMBER	SERIAL NUMBER	SHIP DATE	SITE	RNII SALES ORDER
4500546789	710DU0TT27000	531979	3-Apr-06	JAMES A FITZPATRICK NPP	1674754
4500546789	710DU0TT27000	531980	3-Apr-06	JAMES A FITZPATRICK NPP	1674754
4500546789	710DU0TT27000	531981	3-Apr-06	JAMES A FITZPATRICK NPP	1674754
4500546789	710DU0TT27000	531982	3-Apr-06	JAMES A FITZPATRICK NPP	1674754
4500546789	710DU0TT27000	531983	3-Apr-06	JAMES A FITZPATRICK NPP	1674754
4500554310	710DU0TR34033	534673	7-May-07	JAMES A FITZPATRICK NPP	1848593
4500554310	710DU0TR34033	534674	7-May-07	JAMES A FITZPATRICK NPP	1848593
4500554310	710DU0TR34033	534675	7-May-07	JAMES A FITZPATRICK NPP	1848593
10174727 REV001	710DU0TR34033	536358	3-Mar-08	JAMES A FITZPATRICK NPP	2028404
10174727 REV001	710DU0TR34033	536359	3-Mar-08	JAMES A FITZPATRICK NPP	2028404
10174727 REV001	710DU0TR34033	536360	3-Mar-08	JAMES A FITZPATRICK NPP	2028404
10174727 REV001	710DU0TR34033	536361	3-Mar-08	JAMES A FITZPATRICK NPP	2028404
10174727 REV001	710DU0TR34033	536401	5-Mar-08	JAMES A FITZPATRICK NPP	2028404
10174727 REV001	710DU0TR34033	536402	5-Mar-08	JAMES A FITZPATRICK NPP	2028404
10174727 REV001	710DU0TR34033	536403	5-Mar-08	JAMES A FITZPATRICK NPP	2028404
10174727 REV001	710DU0TR34033	536404	5-Mar-08	JAMES A FITZPATRICK NPP	2028404
10174727 REV001	710DU0TR34033	536405	5-Mar-08	JAMES A FITZPATRICK NPP	2028404
10190952	710DU0TT24015	537190	21-Jul-08	RIVER BEND STATION	2107483
10190952	710DU0TT24015	537191	21-Jul-08	RIVER BEND STATION	2107483
10235125	710DU0TT27000	539664	4-Aug-09	JAMES A FITZPATRICK NPP	2377485
10235125	710DU0TT27000	539665	4-Aug-09	JAMES A FITZPATRICK NPP	2377485
10235125	710DU0TT27000	539666	4-Aug-09	JAMES A FITZPATRICK NPP	2377485
10235125	710DU0TT27000	539667	4-Aug-09	JAMES A FITZPATRICK NPP	2377485
10235125	710DU0TT27000	539668	4-Aug-09	JAMES A FITZPATRICK NPP	2377485
10235125	710DU0TT27000	539669	4-Aug-09	JAMES A FITZPATRICK NPP	2377485
10239775 REV 001	710DU1TS	540349	23-Nov-09	RIVER BEND STATION	2354981
10239775 REV 001	710DU1TS	540350	23-Nov-09	RIVER BEND STATION	2354981
10239775 REV 001	710DU1TS	540351	23-Nov-09	RIVER BEND STATION	2354981
00076959 REV 001 REL 00290	710DU0TS	541044	1-Mar-10	JAMES A FITZPATRICK NPP	2449691
00076959 REV 001 REL 00290	710DU0TS	541045	1-Mar-10	JAMES A FITZPATRICK NPP	2449691
10260754	710DU0TT27000	540940	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	540941	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	540942	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	540943	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	540944	9-Mar-10	JAMES A FITZPATRICK NPP	2456225

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10260754	710DU0TT27000	540945	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	540983	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	540984	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	540985	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	540986	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	540987	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	540988	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	541096	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	541097	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	541098	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	541099	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10260754	710DU0TT27000	541100	9-Mar-10	JAMES A FITZPATRICK NPP	2456225
10278466	710DU0TS	541341	17-May-10	RIVER BEND STATION	2546604
10278466	710DU0TS	541342	17-May-10	RIVER BEND STATION	2546604
10272854	710DU0TT27000	541375	26-May-10	GRAND GULF NUCLEAR STATION	2519319
10272854	710DU0TT27000	541376	26-May-10	GRAND GULF NUCLEAR STATION	2519319
10272854	710DU0TT27000	541377	26-May-10	GRAND GULF NUCLEAR STATION	2519319
10280539 REV 001	710DU0TS	541472	8-Jun-10	JAMES A FITZPATRICK NPP	2558329
10280539 REV 001	710DU0TS	541473	8-Jun-10	JAMES A FITZPATRICK NPP	2558329
10280539 REV 001	710DU0TS	541474	8-Jun-10	JAMES A FITZPATRICK NPP	2558329
10318875	710DU0TR34033	544301	28-Jun-11	JAMES A FITZPATRICK NPP	3114461
10312497	710DU0TS	544318	30-Jun-11	JAMES A FITZPATRICK NPP	3072521
10312497	710DU0TS	544319	30-Jun-11	JAMES A FITZPATRICK NPP	3072521
10312497	710DU0TS	544320	30-Jun-11	JAMES A FITZPATRICK NPP	3072521
10312497	710DU0TS	544321	30-Jun-11	JAMES A FITZPATRICK NPP	3072521
10312497	710DU0TS	544322	30-Jun-11	JAMES A FITZPATRICK NPP	3072521
10340184 REV 003	710DU0TR34033	546158	10-May-12	JAMES A FITZPATRICK NPP	3274736
10340184 REV 003	710DU0TR34033	546159	10-May-12	JAMES A FITZPATRICK NPP	3274736
10340184 REV 003	710DU0TR34033	546160	10-May-12	JAMES A FITZPATRICK NPP	3274736

**\*\*NOTE:** THESE 710 UNITS WERE ORIGINALLY SHIPPED TO QUAD CITIES NUCLEAR STATION (EXELON GENERATION CO LLC)  
BUT WERE TRANSFERRED TO JAMES A FITZPATRICK NPP IN JUNE 2010.

# APPENDIX A: 10 CFR PART 21 NOTIFICATION - 21 JUNE 2012

## EXELON GENERATION CO LLC

PURCHASE ORDER NUMBER	MODEL NUMBER	SERIAL NUMBER	SHIP DATE	SITE	RNII SALES ORDER
00076959 REL 00071	710DU0TT23032	532762	11-Jul-06	QUAD CITIES NUCLEAR STATION	1675760
0007696959 RLS 00084	710DU0TT36157	533005	10-Aug-06	QUAD CITIES NUCLEAR STATION	1711118
0007696959 RLS 00084	710DU0TT36157	533006	10-Aug-06	QUAD CITIES NUCLEAR STATION	1711118
00076959 REV 001 REL 00088	710DU0TT27000	533359	15-Sep-06	QUAD CITIES NUCLEAR STATION	1728559
00076959 REV 001 REL 00081	710DU0TT23032	533518	31-Oct-06	QUAD CITIES NUCLEAR STATION	1699406
00076959 REV 001 REL 00081	710DU0TT23032	533519	31-Oct-06	QUAD CITIES NUCLEAR STATION	1699406
90 102205 REV 2 REL 27	710DU0TT16000	534342	27-Mar-07	PEACH BOTTOM ATOMIC POWER STATION	1817498
90 102205 REV 2 REL 27	710DU0TT16000	534343	27-Mar-07	PEACH BOTTOM ATOMIC POWER STATION	1817498
90 102205 REV 2 REL 27	710DU0TT16000	534344	27-Mar-07	PEACH BOTTOM ATOMIC POWER STATION	1817498
90 102205 REV 2 REL 27	710DU0TT16000	534345	27-Mar-07	PEACH BOTTOM ATOMIC POWER STATION	1817498
90 102205 REV 2 REL 27	710DU0TT16000	534346	27-Mar-07	PEACH BOTTOM ATOMIC POWER STATION	1817498
90 102205 REV 2 REL 27	710DU0TT16000	534347	27-Mar-07	PEACH BOTTOM ATOMIC POWER STATION	1817498
90 102205 REV 2 REL 27	710DU0TT16000	534348	27-Mar-07	PEACH BOTTOM ATOMIC POWER STATION	1817498
90 102205 REL80 REV1	710DU0TT16000	536067	19-Dec-07	PEACH BOTTOM ATOMIC POWER STATION	1999720
90 102205 REL80 REV1	710DU0TT16000	536068	19-Dec-07	PEACH BOTTOM ATOMIC POWER STATION	1999720
00076959 REL00172 REV001	710DU0RA1	536069	19-Dec-07	LASALLE PLANT	2020297
90 102205 REL83 REV2	710DU0TT27000	536152	28-Dec-07	LIMERICK GENERATING STATION	2042177
90 102205 REL83 REV2	710DU0TT27000	536153	28-Dec-07	LIMERICK GENERATING STATION	2042177
00076959 REV 001 REL 00206	710DU0TT27000	538083	12-Nov-08	QUAD CITIES NUCLEAR STATION	2188911
90 102205 REV 1 REL 116	710DU0TT16000	538163	2-Dec-08	PEACH BOTTOM ATOMIC POWER STATION	2223588
90 102205 REV 1 REL 116	710DU0TT16000	538164	2-Dec-08	PEACH BOTTOM ATOMIC POWER STATION	2223588
90 033192 REV 2	710DU0TS	540030	12-Oct-09	LIMERICK GENERATING STATION	2409253
90 033192 REV 2	710DU0TS	540031	12-Oct-09	LIMERICK GENERATING STATION	2409253
00076959 REV 002 REL 00299	710DU0TR16026	540966	22-Feb-10	DRESDEN PLANT	2483512
00076959 REV 002 REL 00299	710DU0TR16026	540967	22-Feb-10	DRESDEN PLANT	2483512
00076959 REV 002 REL 00299	710DU0TR16026	540968	22-Feb-10	DRESDEN PLANT	2483512
00076959 REV 002 REL 00299	710DU0TR16026	540969	22-Feb-10	DRESDEN PLANT	2483512
00076959 REV 001 REL 00290	710DU0TS	541042	1-Mar-10	QUAD CITIES NUCLEAR STATION	2449691
00076959 REV 001 REL 00290	710DU0TS	541043	1-Mar-10	QUAD CITIES NUCLEAR STATION	2449691
00076959 REV 001 REL 00290	710DU0TS	541046	1-Mar-10	QUAD CITIES NUCLEAR STATION	2449691
00076959 REV 001 REL 00290	710DU0TS	541047	1-Mar-10	QUAD CITIES NUCLEAR STATION	2449691
00076959 REV 001 REL 00290	710DU0TS	541048	1-Mar-10	QUAD CITIES NUCLEAR STATION	2449691
00076959 REV 002 REL 00299	710DU0TS	541140	22-Mar-10	DRESDEN PLANT	2483512

00076959 REV 002 REL 00299	710DU0TS	541141	22-Mar-10	DRESDEN PLANT	2483512
00076959 REV 002 REL 00299	710DU0TS	541142	22-Mar-10	DRESDEN PLANT	2483512
90 076959 REL 3	710DU0TT16000	541183	6-Apr-10	PEACH BOTTOM ATOMIC POWER STATION	2511250
90 076959 REL 3	710DU0TT16000	541184	6-Apr-10	PEACH BOTTOM ATOMIC POWER STATION	2511250
00076959 REV 002 REL 00299	710DU0TR16026	541217	14-Apr-10	DRESDEN PLANT	2483512
00076959 REV 002 REL 00299	710DU0TR16026	541218	14-Apr-10	DRESDEN PLANT	2483512
00076959 REV 002 REL 00299	710DU0TR16026	541219	14-Apr-10	DRESDEN PLANT	2483512
00076959 REV 002 REL 00299	710DU0TR16026	541220	14-Apr-10	DRESDEN PLANT	2483512
90 039033 REV 1	710DU0TT27000	541822	8-Sep-10	LIMERICK GENERATING STATION	2590013
90 039033 REV 1	710DU0TT27000	541823	8-Sep-10	LIMERICK GENERATING STATION	2590013
90 039879	710DU0TT27000	541997	21-Oct-10	LIMERICK GENERATING STATION	2621218
90 039879	710DU0TT27000	541998	21-Oct-10	LIMERICK GENERATING STATION	2621218
90 039879	710DU0TT27000	541999	21-Oct-10	LIMERICK GENERATING STATION	2621218
00076959 REL 00333	710DU0TS	542309	6-Dec-10	QUAD CITIES NUCLEAR STATION	2637850
00076959 REL 00333	710DU0TS	542310	6-Dec-10	QUAD CITIES NUCLEAR STATION	2637850
00076959 REL 00333	710DU0TS	542311	6-Dec-10	QUAD CITIES NUCLEAR STATION	2637850
00076959 REL 00333	710DU0TS	542312	6-Dec-10	QUAD CITIES NUCLEAR STATION	2637850
00076959 REL 00333	710DU0TS	542313	6-Dec-10	QUAD CITIES NUCLEAR STATION	2637850
00076959 REL 00333	710DU0TS	542314	6-Dec-10	QUAD CITIES NUCLEAR STATION	2637850
00076959 REL 00333	710DU0TS	542315	6-Dec-10	QUAD CITIES NUCLEAR STATION	2637850
00076959 REL 00333	710DU0TS	542316	6-Dec-10	QUAD CITIES NUCLEAR STATION	2637850
00076959 REL 00333	710DU0TS	542317	6-Dec-10	QUAD CITIES NUCLEAR STATION	2637850
00076959 REL 00333	710DU0TS	542318	6-Dec-10	QUAD CITIES NUCLEAR STATION	2637850
90 076959 REL 7	710DU0TT16000	542150	7-Dec-10	PEACH BOTTOM ATOMIC POWER STATION	2642603
90 076959 REL 7	710DU0TT16000	542151	7-Dec-10	PEACH BOTTOM ATOMIC POWER STATION	2642603
00076959 REL 00334	710DU0TR16026	543399	4-Apr-11	QUAD CITIES NUCLEAR STATION	2637870
00076959 REL 00334	710DU0TR16026	543400	4-Apr-11	QUAD CITIES NUCLEAR STATION	2637870
00076959 REV 001 REL 00363	710DU0TT36157	543690	15-Apr-11	QUAD CITIES NUCLEAR STATION	3034193
00076959 REV 001 REL 00363	710DU0TT36157	543692	18-Apr-11	QUAD CITIES NUCLEAR STATION	3034193
00076959 REV 001 REL 00363	710DU0TT36157	543693	18-Apr-11	QUAD CITIES NUCLEAR STATION	3034193
00076959 REV 001 REL 00363	710DU0TT36157	543691	19-Apr-11	QUAD CITIES NUCLEAR STATION	3034193
00076959 REV 001 REL 00363	710DU0TT36157	543689	20-Apr-11	QUAD CITIES NUCLEAR STATION	3034193
00076959 REL 00334	710DU0TR16026	543765	26-Apr-11	QUAD CITIES NUCLEAR STATION	2637870
00076959 REL 00334	710DU0TR16026	543766	26-Apr-11	QUAD CITIES NUCLEAR STATION	2637870
00076959 REL 00334	710DU0TR16026	543767	26-Apr-11	QUAD CITIES NUCLEAR STATION	2637870
00076959 REL 00334	710DU0TR16026	543768	26-Apr-11	QUAD CITIES NUCLEAR STATION	2637870
00076959 REL 00334	710DU0TR16026	543769	26-Apr-11	QUAD CITIES NUCLEAR STATION	2637870

00076959 REL 00334	710DU0TR16026	543770	26-Apr-11	QUAD CITIES NUCLEAR STATION	2637870
00076959 REL 00334	710DU0TR16026	543771	26-Apr-11	QUAD CITIES NUCLEAR STATION	2637870
00076959 REL 00334	710DU0TR16026	543772	26-Apr-11	QUAD CITIES NUCLEAR STATION	2637870
00076959 REV 001 REL 00345	710DU0TS	543781	29-Apr-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TS	543782	29-Apr-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TS	543783	29-Apr-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TS	543784	29-Apr-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TS	543785	29-Apr-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TS	543786	29-Apr-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00359	710DU0TT27000	543852	5-May-11	QUAD CITIES NUCLEAR STATION	3035249
00076959 REV 001 REL 00345	710DU0TR16026	543864	11-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TR16026	543865	11-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TR16026	543866	11-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TR16026	543867	11-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TR16026	543868	11-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TR16026	543869	11-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TR16026	543870	11-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TR16026	543871	11-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TS	543934	18-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TS	543935	18-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TS	543936	18-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TS	543937	18-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TR16026	543939	18-May-11	DRESDEN PLANT	3000577
00076959 REV 001 REL 00345	710DU0TR16026	543938	24-May-11	DRESDEN PLANT	3000577
00076959 REL 00383	710DU0TS	544315	29-Jun-11	DRESDEN PLANT	3103005
00076959 REL 00383	710DU0TS	544316	29-Jun-11	DRESDEN PLANT	3103005
00076959 REL 00383	710DU0TS	544317	29-Jun-11	DRESDEN PLANT	3103005
00076959 REL 00392	710DU0TT27000	545148	16-Nov-11	QUAD CITIES NUCLEAR STATION	3187215
00076959 REL 00392	710DU0TT27000	545149	16-Nov-11	QUAD CITIES NUCLEAR STATION	3187215
00076959 REL 00392	710DU0TT27000	545150	16-Nov-11	QUAD CITIES NUCLEAR STATION	3187215
00076959 REL 00397	710DU0TT27000	545554	5-Jan-12	QUAD CITIES NUCLEAR STATION	3213642
00076959 REL 00397	710DU0TT27000	545555	5-Jan-12	QUAD CITIES NUCLEAR STATION	3213642
00076959 REV 001 REL 00403	710DU0TT27000	545668	1-Feb-12	QUAD CITIES NUCLEAR STATION	3234340
00076959 REV 001 REL 00406	710DU0TR16026	545735	20-Feb-12	DRESDEN PLANT	3248533
00076959 REL 00424	710DU0TS	545849	9-Mar-12	QUAD CITIES NUCLEAR STATION	3274764
00076959 REL 00424	710DU0TS	545850	9-Mar-12	QUAD CITIES NUCLEAR STATION	3274764

# APPENDIX A: 10 CFR PART 21 NOTIFICATION - 21 JUNE 2012

## FIRST ENERGY CORP

PURCHASE ORDER NUMBER	MODEL NUMBER	SERIAL NUMBER	SHIP DATE	SITE	RNII SALES ORDER
45183445	710DU0TT27000	531827	17-Mar-06	PERRY PLANT	1662617
45183445	710DU0TT27000	531828	17-Mar-06	PERRY PLANT	1662617
45183445	710DU0TT27000	531829	17-Mar-06	PERRY PLANT	1662617
45183445	710DU0TT27000	531830	17-Mar-06	PERRY PLANT	1662617
45183445	710DU0TT27000	531831	17-Mar-06	PERRY PLANT	1662617
45183445	710DU0TT27000	531833	17-Mar-06	PERRY PLANT	1662617
45183445	710DU0TT27000	531834	17-Mar-06	PERRY PLANT	1662617
45289894	710DU0TT27000	538680	19-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538681	19-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538682	19-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538683	19-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538684	19-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538685	19-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538686	19-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538687	19-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538688	19-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538689	19-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538728	20-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538729	20-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538730	20-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538731	20-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538732	20-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538733	20-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538734	20-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538735	20-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538736	20-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538737	20-Feb-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538832	5-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538833	5-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538834	5-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538835	5-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538836	5-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538837	5-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538838	5-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538839	5-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538840	5-Mar-09	PERRY PLANT	2262953

45289894	710DU0TT27000	538841	5-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538942	26-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538943	26-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538944	26-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538945	26-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538946	26-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538947	26-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538948	26-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538949	26-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538950	26-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538951	26-Mar-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538986	1-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538987	1-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538988	1-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538989	1-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538990	1-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538991	1-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538992	1-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538993	1-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538994	1-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	538995	1-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539020	8-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539021	8-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539022	8-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539023	8-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539024	8-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539025	8-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539026	8-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539027	8-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539028	8-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539029	8-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539055	23-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539056	23-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539057	23-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539058	23-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539059	23-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539060	23-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539061	23-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539062	23-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539063	23-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539064	23-Apr-09	PERRY PLANT	2262953

45295059	710DU0TS	539065	23-Apr-09	PERRY PLANT	2292382
45295059	710DU0TS	539066	23-Apr-09	PERRY PLANT	2292382
45295059	710DU0TS	539067	23-Apr-09	PERRY PLANT	2292382
45295059	710DU0TS	539068	23-Apr-09	PERRY PLANT	2292382
45295059	710DU0TS	539069	23-Apr-09	PERRY PLANT	2292382
45295059	710DU0TS	539070	23-Apr-09	PERRY PLANT	2292382
45289894	710DU0TT27000	539081	29-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539082	29-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539083	29-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539084	29-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539085	29-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539086	29-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539087	29-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539088	29-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539089	29-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539090	29-Apr-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539195	22-May-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539196	22-May-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539197	22-May-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539198	22-May-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539199	22-May-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539200	22-May-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539201	22-May-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539202	22-May-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539203	22-May-09	PERRY PLANT	2262953
45289894	710DU0TT27000	539204	22-May-09	PERRY PLANT	2262953
45304789	710DU0TS	539465	8-Jul-09	PERRY PLANT	2346104
45304789	710DU0TS	539466	8-Jul-09	PERRY PLANT	2346104
45304789	710DU0TS	539467	8-Jul-09	PERRY PLANT	2346104
45304789	710DU0TS	539468	8-Jul-09	PERRY PLANT	2346104
45304789	710DU0TS	539469	8-Jul-09	PERRY PLANT	2346104
45304789	710DU0TS	539470	8-Jul-09	PERRY PLANT	2346104
45304789	710DU0TS	539471	8-Jul-09	PERRY PLANT	2346104
45304789	710DU0TS	539472	8-Jul-09	PERRY PLANT	2346104
45304789	710DU0TS	539473	8-Jul-09	PERRY PLANT	2346104
45304789	710DU0TS	539474	8-Jul-09	PERRY PLANT	2346104
45322862	710DU0TS	540902	15-Feb-10	PERRY PLANT	2459610
45322862	710DU0TS	540903	15-Feb-10	PERRY PLANT	2459610
45322862	710DU0TS	540904	15-Feb-10	PERRY PLANT	2459610
45322862	710DU0TS	540905	15-Feb-10	PERRY PLANT	2459610
45326719	710DU0TS	541205	7-Apr-10	PERRY PLANT	2481060



45326719	710DU0TS	541206	7-Apr-10	PERRY PLANT	2481060
45326719	710DU0TS	541207	7-Apr-10	PERRY PLANT	2481060
45339280	710DU0TS	541704	21-Jul-10	PERRY PLANT	2552474
45339280	710DU0TS	541705	21-Jul-10	PERRY PLANT	2552474
45357810	710DU0TT27000	543043	4-Mar-11	PERRY PLANT	2683856
45357810	710DU0TT27000	543044	4-Mar-11	PERRY PLANT	2683856
45357810	710DU0TT27000	543908	24-May-11	PERRY PLANT	2683856
45357810	710DU0TT27000	543909	24-May-11	PERRY PLANT	2683856
45357810	710DU0TT27000	543910	24-May-11	PERRY PLANT	2683856
45357810	710DU0TT27000	543911	24-May-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544194	14-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544195	14-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544196	14-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544197	14-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544198	14-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544199	14-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544200	14-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544201	14-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544271	24-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544272	24-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544273	24-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544274	24-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544275	24-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544276	24-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544277	24-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544278	24-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544279	24-Jun-11	PERRY PLANT	2683856
45357810	710DU0TT27000	544280	24-Jun-11	PERRY PLANT	2683856
45366579	710DU0TS	544371	14-Jul-11	PERRY PLANT	3072515
45366579	710DU0TS	544372	14-Jul-11	PERRY PLANT	3072515
45366579	710DU0TS	544373	14-Jul-11	PERRY PLANT	3072515
45366579	710DU0TS	544374	14-Jul-11	PERRY PLANT	3072515
45366579	710DU0TS	544375	14-Jul-11	PERRY PLANT	3072515
45366579	710DU0TS	544376	14-Jul-11	PERRY PLANT	3072515
45366579	710DU0TS	544377	14-Jul-11	PERRY PLANT	3072515
45366579	710DU0TS	544378	14-Jul-11	PERRY PLANT	3072515
45366590	710DU0TT27000	544405	25-Jul-11	PERRY PLANT	3072516
45366590	710DU0TT27000	544406	25-Jul-11	PERRY PLANT	3072516

# APPENDIX A: 10 CFR PART 21 NOTIFICATION - 21 JUNE 2012

## GE NUCLEAR ENERGY

PURCHASE ORDER NUMBER	MODEL NUMBER	SERIAL NUMBER	SHIP DATE	SITE	RNII SALES ORDER
431002981	710DU0TT66588	532540	15-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT66588	532541	15-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT66588	532542	15-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT66588	532543	15-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT87038	532544	15-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT79034	532545	15-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT79034	532546	15-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT79034	532547	15-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT79034	532548	15-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT98029	532551	15-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT66053	532552	15-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT79034	532549	23-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT79034	532550	23-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT79591	532553	27-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT79591	532554	27-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT79591	532555	27-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT79591	532556	27-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0TT79591	532557	27-Jun-06	LUNG MEN UNIT 2	1713894
431002981	710DU0RA1	532811	24-Jul-06	LUNG MEN UNIT 2	1713894
431002981	710DU0RA1	532812	24-Jul-06	LUNG MEN UNIT 2	1713894
431002981	710DU0RA1	532813	24-Jul-06	LUNG MEN UNIT 2	1713894
431002981	710DU0RA1	532814	24-Jul-06	LUNG MEN UNIT 2	1713894
431006298	710DU0TT37032	532793	26-Jul-06	HOPE CREEK PLANT	1729031
431006298	710DU1TS	535169	20-Jul-07	PERRY PLANT	1729031
431006298	710DU1TS	535170	20-Jul-07	PERRY PLANT	1729031
431006298	710DU1TS	535171	20-Jul-07	PERRY PLANT	1729031
431006298	710DU1TS	535172	20-Jul-07	PERRY PLANT	1729031
431006298	710DU1TS	535173	20-Jul-07	PERRY PLANT	1729031
431006298	710DU1TS	535174	20-Jul-07	PERRY PLANT	1729031

**APPENDIX A: 10 CFR PART 21 NOTIFICATION - 21 JUNE 2012****GEORGIA POWER CO**

<b>PURCHASE ORDER NUMBER</b>	<b>MODEL NUMBER</b>	<b>SERIAL NUMBER</b>	<b>SHIP DATE</b>	<b>SITE</b>	<b>RNII SALES ORDER</b>
6070198	710DU0TS	534197	26-Feb-07	HATCH ELECTRIC GENERATING PLANT	1799841
6070198	710DU0TS	534198	26-Feb-07	HATCH ELECTRIC GENERATING PLANT	1799841
6070196	710DU1TT24250	535455	18-Aug-07	HATCH ELECTRIC GENERATING PLANT	1799293
6070196	710DU1TT24250	535456	18-Aug-07	HATCH ELECTRIC GENERATING PLANT	1799293

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### PROGRESS ENERGY CAROLINAS LLC

PURCHASE ORDER NUMBER	MODEL NUMBER	SERIAL NUMBER	SHIP DATE	SITE	RNII SALES ORDER
00332289 REV 002	710DU0TT27000	535306	8-Aug-07	BRUNSWICK PLANT	1957647
00332289 REV 002	710DU0TT27000	535307	8-Aug-07	BRUNSWICK PLANT	1957647
00332289 REV 002	710DU0TT27000	535375	14-Aug-07	BRUNSWICK PLANT	1957647
00332289 REV 002	710DU0TT27000	535376	14-Aug-07	BRUNSWICK PLANT	1957647
00363836 REV 001	710DU0TS	536898	27-May-08	BRUNSWICK PLANT	2076129
00363836 REV 001	710DU0TS	536899	27-May-08	BRUNSWICK PLANT	2076129
00363836 REV 001	710DU0TS	536900	27-May-08	BRUNSWICK PLANT	2076129
00363836 REV 001	710DU0TS	536901	27-May-08	BRUNSWICK PLANT	2076129
452798	710DU0TT27000	539994	28-Sep-09	BRUNSWICK PLANT	2387217
452798	710DU0TT27000	539995	28-Sep-09	BRUNSWICK PLANT	2387217
452798	710DU0TT27000	539996	28-Sep-09	BRUNSWICK PLANT	2387217
568319	710DU0TS	544438	5-Aug-11	BRUNSWICK PLANT	3113033
568319	710DU0TS	544439	5-Aug-11	BRUNSWICK PLANT	3113033
568319	710DU0TS	544440	5-Aug-11	BRUNSWICK PLANT	3113033
568319	710DU0TS	544441	5-Aug-11	BRUNSWICK PLANT	3113033
568319	710DU0TS	544442	5-Aug-11	BRUNSWICK PLANT	3113033

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## TENNESSEE VALLEY AUTHORITY

PURCHASE ORDER NUMBER	MODEL NUMBER	SERIAL NUMBER	SHIP DATE	SITE	RNII SALES ORDER
00000151 REV 003 RLSE 00081	710DU0TT27000	527665	7-May-04	BROWNS FERRY NUCLEAR PLANT	1273299
00000151 REV 003 RLSE 00081	710DU0TT27000	527669	7-May-04	BROWNS FERRY NUCLEAR PLANT	1273299
00000151 REV 003 RLSE 00081	710DU0TR27000	528182	13-Oct-04	BROWNS FERRY NUCLEAR PLANT	1273299
00000151 RLSE 00184	710DU0TT36590	531822	16-Mar-06	BROWNS FERRY NUCLEAR PLANT	1616878
00000151 RLSE 00184	710DU0TT36590	531823	16-Mar-06	BROWNS FERRY NUCLEAR PLANT	1616878
00000151 RLSE 00184	710DU0TT36590	531824	16-Mar-06	BROWNS FERRY NUCLEAR PLANT	1616878
00000151 REL 00198	710DU0TT27000	531873	20-Mar-06	BROWNS FERRY NUCLEAR PLANT	1673527
00000151 REL 00198	710DU0TT27000	531874	20-Mar-06	BROWNS FERRY NUCLEAR PLANT	1673527
00000151 REL 00207	710DU0RA1	533154	21-Aug-06	CENTRAL LAB SERVICES	1709915
00000151 REL 00207	710DU0RA1	533155	21-Aug-06	CENTRAL LAB SERVICES	1709915
00000151 REL 00207	710DU0RA1	533156	21-Aug-06	CENTRAL LAB SERVICES	1709915
00000151 REL 00207	710DU0RA1	533395	21-Sep-06	CENTRAL LAB SERVICES	1709915
00000151 REL 00207	710DU0RA1	533396	21-Sep-06	CENTRAL LAB SERVICES	1709915
00000151 REL 00207	710DU0RA1	533397	21-Sep-06	CENTRAL LAB SERVICES	1709915
00000151 REL00290	710DU0TT36590	537055	18-Jun-08	BROWNS FERRY NUCLEAR PLANT	2127736
00000151 REL 00317	710DU0TT23028	539387	16-Jun-09	BROWNS FERRY NUCLEAR PLANT	2352229
00000151 REL 00317	710DU0TT23028	539388	16-Jun-09	BROWNS FERRY NUCLEAR PLANT	2352229
70478	710DU0TT27000	541185	6-Apr-10	BROWNS FERRY NUCLEAR PLANT	2490138
82135-1	710DU0TT27000	541245	15-Apr-10	BROWNS FERRY NUCLEAR PLANT	2529897
130944-1	710DU0TT27000	541805	8-Sep-10	BROWNS FERRY NUCLEAR PLANT	2586636
130944-1	710DU0TT27000	541806	8-Sep-10	BROWNS FERRY NUCLEAR PLANT	2586636
373453	710DU0TR34170	545801	2-Mar-12	BROWNS FERRY NUCLEAR PLANT	3276499

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### U-SHUN ENTERPRISE CO LTD

PURCHASE ORDER NUMBER	MODEL NUMBER	SERIAL NUMBER	SHIP DATE	SITE	RNII SALES ORDER
F-263-99-R1 (350-980180626W)	710DU0TR27000	541112	1-Apr-10	CHINSHAN PLANT	2493883
F-263-99-R1 (350-980180626W)	710DU0TR27000	541113	1-Apr-10	CHINSHAN PLANT	2493883
F-023-100 (351-000109068F)	710DU0TT70062	545608	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637
F-023-100 (351-000109068F)	710DU0TT79026	545614	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637
F-023-100 (351-000109068F)	710DU0TT70017	545643	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637
F-023-100 (351-000109068F)	710DU0TT70017	545644	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637
F-023-100 (351-000109068F)	710DU0TS	545659	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637
F-023-100 (351-000109068F)	710DU0TS	545664	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637
F-023-100 (351-000109068F)	710DU0TS	545665	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637
F-023-100 (351-000109068F)	710DU0TS	545678	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637
F-023-100 (351-000109068F)	710DU0TS	545681	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637
F-023-100 (351-000109068F)	710DU0TS	545686	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637
F-023-100 (351-000109068F)	710DU0TT45595	545714	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637
F-023-100 (351-000109068F)	710DU0TT45595	545715	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637
F-023-100 (351-000109068F)	710DU0TT45596	545718	15-Feb-12	KUOSHENG NUCLEAR POWER PLANT	3156637

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## XCEL ENERGY

PURCHASE ORDER NUMBER	MODEL NUMBER	SERIAL NUMBER	SHIP DATE	SITE	RNII SALES ORDER
00004461 REV 001	710DU0TR34033	532860	2-Aug-06	MONTICELLO NUCLEAR GENERATING PLANT	1692442
00004461 REV 001	710DU0RA1	533202	30-Aug-06	MONTICELLO NUCLEAR GENERATING PLANT	1692442
9092	710DU0TT36032	533963	9-Jan-07	MONTICELLO NUCLEAR GENERATING PLANT	1783335
9092	710DU0TT36032	533964	9-Jan-07	MONTICELLO NUCLEAR GENERATING PLANT	1783335
12877	710DU0TT36054	534139	2-Feb-07	MONTICELLO NUCLEAR GENERATING PLANT	1833660
12877	710DU0TT36054	534140	2-Feb-07	MONTICELLO NUCLEAR GENERATING PLANT	1833660
12877	710DU0TT36054	534141	2-Feb-07	MONTICELLO NUCLEAR GENERATING PLANT	1833660
12877	710DU0TT36054	534142	2-Feb-07	MONTICELLO NUCLEAR GENERATING PLANT	1833660
18976	710DU0TT36032	535437	16-Aug-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535438	16-Aug-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535581	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535582	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535583	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535584	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535585	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535586	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535587	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535588	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535589	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535590	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535591	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535592	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535593	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535594	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
18976	710DU0TT36032	535595	17-Sep-07	MONTICELLO NUCLEAR GENERATING PLANT	1938902
22576	710DU0TS	536692	6-May-08	MONTICELLO NUCLEAR GENERATING PLANT	2091657
22576	710DU0TS	536693	6-May-08	MONTICELLO NUCLEAR GENERATING PLANT	2091657
22576	710DU0TS	536694	6-May-08	MONTICELLO NUCLEAR GENERATING PLANT	2091657
22576	710DU0TS	536695	6-May-08	MONTICELLO NUCLEAR GENERATING PLANT	2091657
22576	710DU0TS	536696	6-May-08	MONTICELLO NUCLEAR GENERATING PLANT	2091657
22576	710DU0TS	536697	6-May-08	MONTICELLO NUCLEAR GENERATING PLANT	2091657
22576	710DU0TS	536698	6-May-08	MONTICELLO NUCLEAR GENERATING PLANT	2091657
22576	710DU0TS	536699	6-May-08	MONTICELLO NUCLEAR GENERATING PLANT	2091657
22576	710DU0TS	536700	6-May-08	MONTICELLO NUCLEAR GENERATING PLANT	2091657