

RS-17-172

December 19, 2017

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

Braidwood Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-72 and NPF-77
NRC Docket Nos. STN 50-456 and STN 50-457

Byron Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-37 and NPF-66
NRC Docket Nos. STN 50-454 and STN 50-455

Calvert Cliffs Nuclear Power Plant, Units 1 and 2
Renewed Facility Operating License Nos. DPR-53 and DPR-69
NRC Docket Nos. 50-317 and 50-318

Clinton Power Station, Unit 1
Facility Operating License No. NPF-62
NRC Docket No. 50-461

Dresden Nuclear Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

James A. FitzPatrick Nuclear Power Plant
Renewed Facility Operating License No. DPR-59
NRC Docket No. 50-333

LaSalle County Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-11 and NPF-18
NRC Docket Nos. 50-373 and 50-374

Limerick Generating Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Nine Mile Point Nuclear Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-63 and NPF-69
NRC Docket Nos. 50-220 and 50-410

Oyster Creek Nuclear Generating Station
Renewed Facility Operating License No. DPR-16
NRC Docket No. 50-219

Peach Bottom Atomic Power Station, Units 2 and 3
Renewed Facility Operating License Nos. DPR-44 and DPR-56
NRC Docket Nos. 50-277 and 50-278

Quad Cities Nuclear Power Station, Units 1 and 2
Renewed Facility Operating License Nos. DPR-29 and DPR-30
NRC Docket Nos. 50-254 and 50-265

R.E. Ginna Nuclear Power Plant
Renewed Facility Operating License No. DPR-18
NRC Docket No. 50-244

Three Mile Island Nuclear Station, Unit 1
Renewed Facility Operating License No. DPR-50
NRC Docket No. 50-289

Subject: Commitments for Resolution of Anchor Darling Double Disc Gate Valve
Part 21 Issues

- References:
- 1) Letter from William Trafton (Exelon Generation Company, LLC), to U.S. Nuclear Regulatory Commission, Amendment to Commitments for Resolution of Anchor Darling Double Disc Gate Valve Part 21 Issues, dated June 20, 2017
 - 2) BWROG Topical Report TP16-1-112, Revision 4, Recommendations to Resolve Flowserve 10CFR Part 21 Notification Affecting Anchor Darling Double Disc Gate Valve Wedge Pin Failures, dated August 2017
 - 3) Letter from Greg Krueger (NEI) to John Lubinski (U.S. Nuclear Regulatory Commission), Anchor Darling Double Disc Gate Valve Industry Resolution Plan Update (Project 689), dated August 4, 2017
 - 4) Letter from James Barstow (Exelon Generation Company, LLC) to U.S. Nuclear Regulatory Commission, Commitments for Resolution of Anchor Darling Double Disc Gate Valve Part 21 Issues, dated August 29, 2017
 - 5) Letter from Joe Pollock (NEI) to Brian Holian (U.S. Nuclear Regulatory Commission), NSIAC Concurrence on Anchor Darling Double Disc Gate Valve Industry Response Actions (Project 689), dated October 26, 2017

In Reference 4, Exelon Generation Company, LLC (EGC) provided a status of the resolution of Anchor Darling Double Disk Gate Valve (ADDDGV) issues specifically related to safety-related Motor Operated Valve (MOV) applications at Oyster Creek Nuclear Generating Station and Quad Cities Nuclear Power Station, Units 1 and 2, in addition to providing commitment to valve repairs at these stations. Additionally, the Reference 4 letter committed to communicating repair schedule commitments by December 31, 2017.

Further review of the EGC fleet has determined that Braidwood Station, Units 1 and 2; Byron Station, Units 1 and 2; Clinton Power Station, Unit 1; and Nine Mile Point Nuclear Station, Units 1 and 2, do not use motor-operated ADDDGVs to support any active safety function and/or utilized in Generic Letter 96-05 MOV program applications.

Attached is additional information and updates regarding repair plans for the remainder of the EGC fleet. For each applicable site, Attachments 1 through 10 contain the following information for each applicable active safety-related MOV:

- Plant Name, Unit, and Valve ID
- System
- Valve Functional Description
- Valve Size
- Active Safety Function (Open, Close, Both)
- Are multiple design basis post-accident strokes required? (Yes/No)
- Expert Panel Risk Ranking (High, Medium, Low)
- Result of susceptibility evaluation (susceptible or not susceptible)
- Is the susceptibility evaluation in general conformance with TP16-1-112R4 where the wedge pin applied torque must bound anticipated design basis operating torque requirements and current maximum total torque? (Yes/No)
- Does the susceptibility evaluation rely on thread friction? If yes, include rotation criteria (No), (Yes, >0.10), (Yes, ≤0.10)
- Was an initial stem-rotation check performed? If yes, include rotation criteria (No), (Yes, ≤10 deg.), (Yes, ≤5 deg.)
- Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4? (Yes/No)
- The valve's repair status (repaired or not repaired)

EGC commits to perform all applicable activities identified in Attachment 11. EGC may modify these commitments should additional technical information or repair methods become available to justify such action. Additionally, Exelon has implemented MOV Program requirements for periodic Stem Rotation Checks for all applicable GL 96-05 motor operated ADDDGVs at the Periodic Verification Test (PVT) interval in accordance with TP16-1-112R4, Attachment 10.

Should you have any questions or require additional information, please contact Tom Basso, Director of Centralized Program Engineering (Thomas.Basso@Exeloncorp.com, 610-765-5910).

Respectfully,



James Barstow
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

- Attachments:
- 1) Calvert Cliffs Nuclear Power Plant, Units 1 and 2
 - 2) Dresden Nuclear Power Station, Units 2 and 3
 - 3) James A. FitzPatrick Nuclear Power Plant
 - 4) R.E. Ginna Nuclear Power Plant
 - 5) LaSalle County Station, Units 1 and 2
 - 6) Limerick Generating Station, Units 1 and 2
 - 7) Oyster Creek Nuclear Generating Station
 - 8) Quad Cities Nuclear Power Station, Units 1 and 2
 - 9) Peach Bottom Atomic Power Station, Units 2 and 3
 - 10) Three Mile Island Nuclear Station, Unit 1
 - 11) Summary of Regulatory Commitments

cc: Regional Administrator - NRC Region I
Regional Administrator - NRC Region III
NRC Senior Resident Inspector - Braidwood Station
NRC Senior Resident Inspector - Byron Station
NRC Senior Resident Inspector - Calvert Cliffs Nuclear Power Plant
NRC Senior Resident Inspector - Clinton Power Station
NRC Senior Resident Inspector - Dresden Nuclear Power Station
NRC Senior Resident Inspector - James A. FitzPatrick Nuclear Power Plant
NRC Senior Resident Inspector - LaSalle County Station
NRC Senior Resident Inspector - Limerick Generating Station
NRC Senior Resident Inspector - Nine Mile Point Nuclear Station
NRC Senior Resident Inspector - Oyster Creek Nuclear Generating Station
NRC Senior Resident Inspector - Peach Bottom Atomic Power Station
NRC Senior Resident Inspector - Quad Cities Nuclear Power Station
NRC Senior Resident Inspector - R.E. Ginna Nuclear Power Plant
NRC Senior Resident Inspector - Three Mile Island Nuclear Station, Unit 1
S. T. Gray, State of Maryland (w/o attachments)
Illinois Emergency Management Agency - Division of Nuclear Safety -
(w/o attachments)
R. R. Janati, Bureau of Radiation Protection, Commonwealth of Pennsylvania
(w/o attachments)
Manager, Bureau of Nuclear Engineering, New Jersey Department of
Environmental Protection (w/o attachments)
Mayor of Lacey Township, Forked River, NJ (w/o attachments)
A. L. Peterson, NYSERDA (w/o attachments)

ATTACHMENT 1
Exelon Generation Plant ADDDGV Listing with Active Safety Related Applications – Calvert Cliffs

Plant Name	Unit	Valve ID	System	Valve Functional Description	Valve Size (inches)	Active Safety Function (Open, Close, Both)	Are multiple design basis post-accident strokes required? (Yes/No)	Expert Panel Risk Ranking (High, Medium, Low)	Result of susceptibility evaluation (susceptible or not susceptible)	Is the susceptibility evaluation in general conformance with TP16-1-112R4? (Yes/No)	Does the susceptibility evaluation rely on thread friction? If yes, was the COF greater than 0.10? (No), (Yes, >0.10), (Yes, ≤0.10)	Was an initial stem-rotation check performed? If yes, include rotation criteria (No), (Yes, ≤10 deg.), (Yes, ≤5 deg.)	Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4? (Yes/ No)	Valve repair status (repaired or not repaired)
Calvert Cliffs	1	1MOV0403	Reactor Coolant Pressurizer	PORV Blocking Valve	2.5	Both	Yes	Medium	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Calvert Cliffs	1	1MOV0405	Reactor Coolant Pressurizer	PORV Blocking Valve	2.5	Both	Yes	Medium	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Calvert Cliffs	1	1MOV2080	Instrument Air	Instrument Air Containment Isolation Valve	2.0	Both	Yes	Low	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Calvert Cliffs	2	2MOV0403	Reactor Coolant Pressurizer	PORV Blocking Valve	2.5	Both	Yes	Medium	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Calvert Cliffs	2	2MOV0405	Reactor Coolant Pressurizer	PORV Blocking Valve	2.5	Both	Yes	Medium	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Calvert Cliffs	2	2MOV2080	Instrument Air	Instrument Air Containment Isolation Valve	2.0	Both	Yes	Low	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Notes (1): T-Head Connection Stem/Wedge Connection is not applicable to the Flowserve Part 21 (i.e. does not include threaded connection with wedge pin).														

ATTACHMENT 2
Exelon Generation Plant ADDDGV Listing with Active Safety Related Applications – Dresden

Plant Name	Unit	Valve ID	System	Valve Functional Description	Valve Size (inches)	Active Safety Function (Open, Close, Both)	Are multiple design basis post-accident strokes required? (Yes/No)	Expert Panel Risk Ranking (High, Medium, Low)	Result of susceptibility evaluation (susceptible or not susceptible)	Is the susceptibility evaluation in general conformance with TP16-1-112R4? (Yes/No)	Does the susceptibility evaluation rely on thread friction? If yes, was the COF greater than 0.10? (No), (Yes, >0.10), (Yes, ≤0.10)	Was an initial stem-rotation check performed? If yes, include rotation criteria (No), (Yes, ≤10 deg.), (Yes, ≤5 deg.)	Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4? (Yes/ No)	Valve repair status (repaired or not repaired)
Dresden	2	2-0205-2-4	Nuclear Boiler	Reactor Head Spray Outboard Isolation Valve	3.0	Close	No	Low	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Dresden	2	2-1001-01A	Residual Heat Removal	Shutdown Cooling Suction Inboard Containment Isolation	16	Close	No	Low	Not Susceptible	Yes	No	Yes, < 5 deg.	Yes Last Tested 2017	Not Repaired
Dresden	2	2-1001-01B	Residual Heat Removal	Shutdown Cooling Suction Inboard Containment Isolation	16	Close	No	Low	Not Susceptible	Yes	No	N/A	Yes Last Tested 2009	Not Repaired
Dresden	3	3-0205-2-4	Nuclear Boiler	Reactor Head Spray Outboard Isolation	2.5	Close	No	Low	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Dresden	3	3-1201-1	Reactor Water Cleanup	RWCU Inlet Containment Isolation	8	Close	No	Medium	Not Susceptible	Yes	No	Yes, < 10 deg.	Yes Last Tested 2016	Not Repaired
Dresden	3	3-1201-1-1A	Reactor Water Cleanup	RWCU Inlet Bypass Containment Isolation	2	Close	No	Medium	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Dresden	3	3-1201-2	Reactor Water Cleanup	RWCU Aux Pump Bypass	8	Close	No	Medium	Not Susceptible	Yes	No	Yes, < 10 deg.	Yes Last Tested 2014	Not Repaired
Notes (1): T-Head Connection Stem/Wedge Connection is not applicable to the Flowserve Part 21 (i.e. does not include threaded connection with wedge pin).														

ATTACHMENT 3
Exelon Generation Plant ADDDGV Listing with Active Safety Related Applications – FitzPatrick

Plant Name	Unit	Valve ID	System	Valve Functional Description	Valve Size (inches)	Active Safety Function (Open, Close, Both)	Are multiple design basis post-accident strokes required? (Yes/No)	Expert Panel Risk Ranking (High, Medium, Low)	Result of susceptibility evaluation (susceptible or not susceptible)	Is the susceptibility evaluation in general conformance with TP16-1-112R4? (Yes/No)	Does the susceptibility evaluation rely on thread friction? If yes, was the COF greater than 0.10? (No), (Yes, >0.10), (Yes, ≤0.10)	Was an initial stem-rotation check performed? If yes, include rotation criteria (No), (Yes, ≤10 deg.), (Yes, ≤5 deg.)	Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4? (Yes/ No)	Valve repair status (repaired or not repaired)
FitzPatrick	1	02-2MOV-53A	Reactor Recirculation	Rx Recirc Pump A Discharge	28	Close	No	Low	Susceptible (Note 2)	See Note 2	See Note 2	No, Note 3	Yes Last Tested: 2014	Scheduled – Att.11, Cat. C
FitzPatrick	1	02-2MOV-53B	Reactor Recirculation	Rx Recirc Pump B Discharge	28	Close	No	Low	Susceptible (Note 2)	See Note 2	See Note 2	No, Note 3	Yes Last Tested: 2014	Scheduled – Att.11, Cat. C
FitzPatrick	1	10MOV-16A	Residual Heat Removal	RHR A Minimum Flow	4	Both	Yes	Low	Not Susceptible	Yes	No	No, Note 3	Yes Last Tested: 2010	Not Repaired
FitzPatrick	1	10MOV-16B	Residual Heat Removal	RHR B Minimum Flow	4	Both	Yes	Low	Not Susceptible	Yes	No	No, Note 3	Yes Last Tested: 2010	Not Repaired
FitzPatrick	1	10MOV-17	Residual Heat Removal	RHR Shutdown Cooling OB Isolation	20	Close	No	Medium	Not Susceptible	Yes	No	No, Note 3	Yes Last Tested: 2014	Not Repaired
FitzPatrick	1	10MOV-18	Residual Heat Removal	RHR Shutdown Cooling IB Isolation	20	Close	No	Medium	Not Susceptible	Yes	No	No, Note 3	Yes Last Tested: 2017	Not Repaired
FitzPatrick	1	10MOV-26A	Residual Heat Removal	RHR Train A Containment Spray	10	Both	Yes	High	Susceptible (Note 2)	See Note 2	See Note 2	No, Note 3	Yes Last Tested: 2017	Scheduled – Att. 11, Cat. A
FitzPatrick	1	10MOV-26B	Residual Heat Removal	RHR Train B Containment Spray	10	Both	Yes	High	Susceptible (Note 2)	See Note 2	See Note 2	No, Note 3	Yes Last Tested: 2014	Scheduled – Att.11, Cat. A
FitzPatrick	1	10MOV-39B	Residual Heat Removal	RHR Train B Torus Cooling Isolation	16	Both	Yes	High	Not Susceptible (Note 2)	See Note 2	Yes < 0.1	No, Note 3	Yes Last Tested: 2013	Not Repaired
FitzPatrick	1	12MOV-15	Rx Water Cleanup	RWCU Supply Inboard	6	Close	No	High	Susceptible (Note 2)	See Note 2	See Note 2	No, Note 3	Yes Last Tested: 2017	Scheduled – Att. 11, Cat. B
FitzPatrick	1	12MOV-69	Rx Water Cleanup	RWCU Return Containment	4	Close	No	Low	Susceptible (Note 2)	See Note 2	See Note 2	No, Note 3	Yes Last Tested: 2012	Scheduled – Att.11, Cat. C
FitzPatrick	1	13MOV-15	Reactor Core Isolation Cool	RCIC Steam Supply Inboard Isolation	3	Close	No	High	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
FitzPatrick	1	23MOV-15	High Pressure Coolant Inject	HPCI Steam Supply Isolation	10	Close	No	High	Not Susceptible (Note 2)	See Note 2	Yes < 0.1	No, Note 3	Yes Last Tested: 2014	Not Repaired
FitzPatrick	1	20MOV-82	Rad Waste	Drywell Floor Drain Sump Isolation	3	Close	No	Low	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
FitzPatrick	1	20MOV-94	Rad Waste	Drywell Equipment Drain Sump Isolation	3	Close	No	Low	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
FitzPatrick	1	29MOV-74	Main Steam	MS Line Drain Inboard Isolation	3	Close	No	Low	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
FitzPatrick	1	29MOV-77	Main Steam	MS Line Drain Outboard Isolation	3	Close	No	Low	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Notes: (1): T-Head Connection Stem/Wedge Connection is not applicable to the Flowserve Part 21 (i.e. does not include threaded connection with wedge pin). (2): Initial wedge pin susceptibility evaluation relied on thread friction. Consequently, a re-evaluation performed in 2017 has determined the applicable MOVs to be susceptible and subject to repair if thread COF required is > 0.1. (3): Until 2017, plant considered all of their MOVs as non-susceptible by wedge pin analysis; consequently no stem rotation check inspections were performed.														

ATTACHMENT 4
Exelon Generation Plant ADDDGV Listing with Active Safety Related Applications – Ginna

Plant Name	Unit	Valve ID	System	Valve Functional Description	Valve Size (inches)	Active Safety Function (Open, Close, Both)	Are multiple design basis post-accident strokes required? (Yes/No)	Expert Panel Risk Ranking (High, Medium, Low)	Result of susceptibility evaluation (susceptible or not susceptible)	Is the susceptibility evaluation in general conformance with TP16-1-112R4? (Yes/No)	Does the susceptibility evaluation rely on thread friction? If yes, was the COF greater than 0.10? (No), (Yes, >0.10), (Yes, ≤0.10)	Was an initial stem-rotation check performed? If yes, include rotation criteria (No), (Yes, ≤10 deg.), (Yes, ≤5 deg.)	Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4? (Yes/ No)	Valve repair status (repaired or not repaired)
Ginna	1	515	RCS Pressurizer	Pressurizer Relief Stop Valve	3.0	Both	Yes	Low	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Ginna	1	516	RCS Pressurizer	Pressurizer Relief Stop Valve	3.0	Both	Yes	Low	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Ginna	1	704A	Residual Heat Removal	RHR Pump 1A Cross Connect	10.0	Close	No	Low	Susceptible (Note 2)	See Note 2	See Note 2	No, Note 3	Yes Last Tested: 2011	Scheduled – Att.11, Cat. C
Ginna	1	704B	Residual Heat Removal	RHR Pump 1B Cross Connect	10.0	Close	No	Low	Susceptible (Note 2)	See Note 2	See Note 2	No, Note 3	Yes Last Tested: 2009	Scheduled – Att.11, Cat. C
Ginna	1	841	Safety Injection	Accumulator Tank 1A Shutoff	10.0	Close	Yes	Medium	Susceptible (Note 2)	See Note 2	See Note 2	No, Note 3	Yes Last Tested: 2014	Scheduled – Att. 11, Cat. C
Ginna	1	850A	Residual Heat Removal	Sump B to RHR Pumps	10.0	Both	Yes	High	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested: 2017	Not Repaired
Ginna	1	850B	Residual Heat Removal	Sump B to RHR Pumps	10.0	Both	Yes	High	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested: 2017	Not Repaired
Ginna	1	856	Residual Heat Removal	RWST to RHR Pumps	10.0	Close	No	Medium	Not Susceptible	Yes	No	No, Note 3	Yes Last Tested: 2011	Not Repaired
Ginna	1	857A	Residual Heat Removal	1A RHR HX to SIP/CSP	6.0	Open	No	Low	Not Susceptible	Yes	No	No, Note 3	Yes Last Tested: 2014	Not Repaired
Ginna	1	857B	Residual Heat Removal	1B RHR HX to SIP/CSP	6.0	Open	No	Medium	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested: 2017	Not Repaired
Ginna	1	857C	Residual Heat Removal	RHR HX to 1A Outlet	6.0	Open	No	Low	Not Susceptible	Yes	No	No, Note 3	Yes Last Tested: 2015	Not Repaired
Ginna	1	860A	Containment Spray	1A CSP Discharge	6.0	Both	Yes	Low	Not Susceptible	Yes	No	No, Note 3	Yes Last Tested: 2014	Not Repaired
Ginna	1	860B	Containment Spray	1A CSP Discharge	6.0	Both	Yes	Low	Not Susceptible	Yes	No	No, Note 3	Yes Last Tested: 2015	Not Repaired
Ginna	1	860C	Containment Spray	1B CSP Discharge	6.0	Both	Yes	Low	Not Susceptible	Yes	No	No, Note 3	Yes Last Tested: 2015	Not Repaired
Ginna	1	860D	Containment Spray	1B CSP Discharge	6.0	Both	Yes	Low	Not Susceptible	Yes	No	No, Note 3	Yes Last Tested: 2015	Not Repaired
Ginna	1	865	Safety Injection	Accumulator Tank 1B Shutoff	10.0	Close	No	Medium	Susceptible (Note 2)	See Note 2	See Note 2	No, Note 3	Yes Last Tested: 2014	Scheduled – Att. 11, Cat. C
Notes: (1): T-Head Connection Stem/Wedge Connection is not applicable to the Flowserve Part 21 (i.e. does not include threaded connection with wedge pin). (2): Initial wedge pin susceptibility evaluation relied on thread friction. Consequently, a re-evaluation performed in 2017 has determined the applicable MOVs to be susceptible and subject to repair if thread COF required is > 0.1. (3): Until 2017, Ginna was not identified as having susceptible valves due to not being included in the 2013 Flowserve Part 21; consequently no stem rotation check inspections were performed prior to 2017.														

ATTACHMENT 5
Exelon Generation Plant ADDDGV Listing with Active Safety Related Applications – LaSalle (Page 1 of 2)

Plant Name	Unit	Valve ID	System	Valve Functional Description	Valve Size (inches)	Active Safety Function (Open, Close, Both)	Are multiple design basis post-accident strokes required? (Yes/No)	Expert Panel Risk Ranking (High, Medium, Low)	Result of susceptibility evaluation (susceptible or not susceptible)	Is the susceptibility evaluation in general conformance with TP16-1-112R4? (Yes/No)	Does the susceptibility evaluation rely on thread friction? If yes, was the COF greater than 0.10? (No), (Yes, >0.10), (Yes, ≤0.10)	Was an initial stem-rotation check performed? If yes, include rotation criteria (No), (Yes, ≤10 deg.), (Yes, ≤5 deg.)	Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4? (Yes/ No)	Valve repair status (repaired or not repaired)
LaSalle	1	1B21-F067A	Main Steam Drains	MS Drain Line Isolation	1.5	Close	No	L	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
LaSalle	1	1B21-F067B	Main Steam Drains	MS Drain Line Isolation	1.5	Close	No	L	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
LaSalle	1	1B21-F067C	Main Steam Drains	MS Drain Line Isolation	1.5	Close	No	L	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
LaSalle	1	1B21-F067D	Main Steam Drains	MS Drain Line Isolation	1.5	Close	No	L	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
LaSalle	2	2B21-F067A	Main Steam Drains	MS Drain Line Isolation	1.5	Close	No	L	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
LaSalle	2	2B21-F067B	Main Steam Drains	MS Drain Line Isolation	1.5	Close	No	L	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
LaSalle	2	2B21-F067C	Main Steam Drains	MS Drain Line Isolation	1.5	Close	No	L	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
LaSalle	2	2B21-F067D	Main Steam Drains	MS Drain Line Isolation	1.5	Close	No	L	Not Applicable (Note 1)	N/A	N/A	N/A	N/A	N/A
Notes: (1): T-Head Connection Stem/Wedge Connection is not applicable to the Flowserve Part 21 (i.e. does not include threaded connection with wedge pin).														

ATTACHMENT 5
Exelon Generation Plant ADDDGV Listing with Active Safety Related Applications – LaSalle (Page 2 of 2)

Plant Name	Unit	Valve ID	System	Valve Functional Description	Valve Size (inches)	Active Safety Function (Open, Close, Both)	Are multiple design basis post-accident strokes required? (Yes/No)	Expert Panel Risk Ranking (High, Medium, Low)	Result of susceptibility evaluation (susceptible or not susceptible)	Is the susceptibility evaluation in general conformance with TP16-1-112R4? (Yes/No)	Does the susceptibility evaluation rely on thread friction? If yes, was the COF greater than 0.10? (No), (Yes, >0.10), (Yes, ≤0.10)	Was an initial stem-rotation check performed? If yes, include rotation criteria (No), (Yes, ≤10 deg.), (Yes, ≤5 deg.)	Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4? (Yes/ No)	Valve repair status (repaired or not repaired)
LaSalle	1	1E22-F004	High Pressure Core Spray	HPCS Injection Isolation	12	Both	Yes	Medium	Not Susceptible	Note 4	N/A	Note 4	N/A	Repaired June 2017
LaSalle	1	1E22-F012	High Pressure Core Spray	HPCS Pump Min Flow	4	Both	Yes	Medium	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested: 2016	Scheduled – Att.11, Cat. A
LaSalle	1	1E22-F015	High Pressure Core Spray	HPCS Pump Suppress Pool Suction	18	Close	No	Low	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested: 2016	Scheduled – Att.11, Cat. C
LaSalle	1	1E51-F008	Reactor Core Isol. Cooling	RCIC Steam Outboard Isolation	4	Close	No	Medium	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested: 2016	Scheduled – Att.11, Cat. B
LaSalle	1	1E51-F013	Reactor Core Isol. Cooling	RCIC Injection Outboard Isolation	6	Both	No	Low	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested: 2016	Scheduled – Att.11, Cat. C
LaSalle	1	1E51-F063	Reactor Core Isol. Cooling	RCIC Steam Supply Inboard Isolation	10	Close	No	High	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested: 2016	Scheduled – Att. 11, Cat. B
LaSalle	1	1G33-F001	Rx Water Cleanup	RWCU Inboard Isolation	6	Close	No	Medium	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested: 2016	Scheduled – Att. 11, Cat. B
LaSalle	1	1G33-F004	Rx Water Cleanup	RWCU Outboard Isolation	6	Close	No	High	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested: 2016	Scheduled – Att. 11, Cat. B
LaSalle	2	2E22-F004	High Pressure Core Spray	HPCS Injection Isolation	12	Both	Yes	Medium	Not Susceptible	Note 4	N/A	Note 4	N/A	Repaired February 2017
LaSalle	2	2E22-F012	High Pressure Core Spray	HPCS Pump Min Flow	4	Both	Yes	Medium	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested: 2015	Scheduled – Att. 11,Cat. A
LaSalle	2	2E22-F015	High Pressure Core Spray	HPCS Pump Suppress Pool Suction	18	Close	No	Low	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested: 2015	Scheduled – Att. 11, Cat. C
LaSalle	2	2E51-F008	Reactor Core Isol. Cooling	RCIC Steam Outboard Isolation	4	Close	No	Medium	Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested: 2017	Scheduled – Att. 11, Cat. B
LaSalle	2	2E51-F063	Reactor Core Isol. Cooling	RCIC Steam Supply Inboard Isolation	10	Close	No	High	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested: 2015	Scheduled – Att. 11, Cat. B
LaSalle	2	2G33-F001	Rx Water Cleanup	RWCU Inboard Isolation	6	Close	No	Medium	Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested: 2017	Scheduled – Att. 11, Cat. B
LaSalle	2	2G33-F004	Rx Water Cleanup	RWCU Outboard Isolation	6	Close	No	High	Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested: 2017	Scheduled – Att. 11, Cat. B
Notes: (4): Until repaired in 2017, these valves were identified as being susceptible. 2E22-F004 had a stem-disc separation failure in Feb 2017 during L2R16. 1E22-F004 was identified with a failed wedge pin but with the wedge/stem fully connected during June 2017 Unit 1 Maintenance Outage.														

ATTACHMENT 6
Exelon Generation Plant ADDDGV Listing with Active Safety Related Applications – Limerick

Plant Name	Unit	Valve ID	System	Valve Functional Description	Valve Size (inches)	Active Safety Function (Open, Close, Both)	Are multiple design basis post-accident strokes required? (Yes/No)	Expert Panel Risk Ranking (High, Medium, Low)	Result of susceptibility evaluation (susceptible or not susceptible)	Is the susceptibility evaluation in general conformance with TP16-1-112R4? (Yes/No)	Does the susceptibility evaluation rely on thread friction? If yes, was the COF greater than 0.10? (No), (Yes, >0.10), (Yes, ≤0.10)	Was an initial stem-rotation check performed? If yes, include rotation criteria (No), (Yes, ≤10 deg.), (Yes, ≤5 deg.)	Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4? (Yes/ No)	Valve repair status (repaired or not repaired)
Limerick	1	HV-052-1F001A	Core Spray	Core Spray Cooling Pump A Suction	16	Close	No	Low	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested 2016	Not Repaired
Limerick	1	HV-052-1F001B	Core Spray	Core Spray Cooling Pump B Suction	16	Close	No	Low	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested 2014	Not Repaired
Limerick	1	HV-052-1F001C	Core Spray	Core Spray Cooling Pump C Suction	16	Close	No	Low	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested 2014	Not Repaired
Limerick	1	HV-052-1F001D	Core Spray	Core Spray Cooling Pump D Suction	16	Close	No	Low	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested 2015	Not Repaired
Limerick	2	HV-052-2F001A	Core Spray	Core Spray Cooling Pump A Suction	16	Close	No	Low	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested 2015	Not Repaired
Limerick	2	HV-052-2F001B	Core Spray	Core Spray Cooling Pump B Suction	16	Close	No	Low	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested 2016	Not Repaired
Limerick	2	HV-052-2F001C	Core Spray	Core Spray Cooling Pump C Suction	16	Close	No	Low	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested 2015	Not Repaired
Limerick	2	HV-052-2F001D	Core Spray	Core Spray Cooling Pump D Suction	16	Close	No	Low	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested 2016	Not Repaired
Notes: None														

ATTACHMENT 7
Exelon Generation Plant ADDDGV Listing with Active Safety Related Applications – Oyster Creek

Plant Name	Unit	Valve ID	System	Valve Functional Description	Valve Size (inches)	Active Safety Function (Open, Close, Both)	Are multiple design basis post-accident strokes required? (Yes/No)	Expert Panel Risk Ranking (High, Medium, Low)	Result of susceptibility evaluation (susceptible or not susceptible)	Is the susceptibility evaluation in general conformance with TP16-1-112R4? (Yes/No)	Does the susceptibility evaluation rely on thread friction? If yes, was the COF greater than 0.10? (No), (Yes, >0.10), (Yes, ≤0.10)	Was an initial stem-rotation check performed? If yes, include rotation criteria (No), (Yes, ≤10 deg.), (Yes, ≤5 deg.)	Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4? (Yes/ No)	Valve repair status (repaired or not repaired)
Oyster Creek	1	V-14-0030	Isolation Condenser	IC NEO1A INLET ISOLATION VALVE	10	Close	No	Medium	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2016	Note 6 Att.11, Cat. B
Oyster Creek	1	V-14-0031	Isolation Condenser	IC NEO1A INLET ISOLATION VALVE	10	Close	No	Medium	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2012	Note 6 Att. 11, Cat. B
Oyster Creek	1	V-14-0032	Isolation Condenser	IC NEO1B INLET ISOLATION VALVE	10	Close	No	Medium	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2010	Note 6 Att. 11, Cat. B
Oyster Creek	1	V-14-0033	Isolation Condenser	IC NEO1B INLET ISOLATION VALVE	10	Close	No	Medium	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2016	Note 6 Att. 11, Cat. B
Oyster Creek	1	V-14-0034	Isolation Condenser	IC NEO1A Outlet ISOLATION VALVE	10	Both	Yes	High	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2016	Note 5 Att. 11, Cat. A
Oyster Creek	1	V-14-0035	Isolation Condenser	IC NEO1B Outlet ISOLATION VALVE	10	Both	Yes	High	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2016	Note 5 Att. 11, Cat. A
Notes: Note (5): Repair Schedule Commitment for OC1R27 in Aug 29 2017 Exelon Letter to the NRC Note (6): Test/Inspect Schedule Commitment for OC1R17 in Aug 29 2017 Exelon Letter to the NRC														

ATTACHMENT 8
Exelon Generation Plant ADDDGV Listing with Active Safety Related Applications – Quad Cities

Plant Name	Unit	Valve ID	System	Valve Functional Description	Valve Size (inches)	Active Safety Function (Open, Close, Both)	Are multiple design basis post-accident strokes required? (Yes/No)	Expert Panel Risk Ranking (High, Medium, Low)	Result of susceptibility evaluation (susceptible or not susceptible)	Is the susceptibility evaluation in general conformance with TP16-1-112R4? (Yes/No)	Does the susceptibility evaluation rely on thread friction? If yes, was the COF greater than 0.10? (No), (Yes, >0.10), (Yes, ≤0.10)	Was an initial stem-rotation check performed? If yes, include rotation criteria (No), (Yes, ≤10 deg.), (Yes, ≤5 deg.)	Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4? (Yes/ No)	Valve repair status (repaired or not repaired)
Quad Cities	1	1-1201-2	Reactor Water Cleanup	RWCU Inboard Isolation	6	Close	No	High	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2015	Note 7 Att. 11, Cat. B
Quad Cities	1	1-1201-5	Reactor Water Cleanup	RWCU Outboard Isolation	6	Close	No	Medium	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2017	Note 7 Att. 11, Cat. B
Quad Cities	2	2-1201-2	Reactor Water Cleanup	RWCU Inboard Isolation	6	Close	No	High	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2016	Note 7 Att. 11, Cat. B
Quad Cities	2	2-1201-5	Reactor Water Cleanup	RWCU Outboard Isolation	6	Close	No	Medium	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2016	Note 7 Att. 11, Cat. B
Notes: Note(7): Repair Schedule Commitment for Unit 1 (Q1R25 in 2019) and Unit 2 (Q2R24 in 2018) in Aug 29 2017 Exelon Letter to the NRC.														

ATTACHMENT 9
Exelon Generation Plant ADDGV Listing with Active Safety Related Applications – Peach Bottom

Plant Name	Unit	Valve ID	System	Valve Functional Description	Valve Size (inches)	Active Safety Function (Open, Close, Both)	Are multiple design basis post-accident strokes required? (Yes/No)	Expert Panel Risk Ranking (High, Medium, Low)	Result of susceptibility evaluation (susceptible or not susceptible)	Is the susceptibility evaluation in general conformance with TP16-1-112R4? (Yes/No)	Does the susceptibility evaluation rely on thread friction? If yes, was the COF greater than 0.10? (No), (Yes, >0.10), (Yes, ≤0.10)	Was an initial stem-rotation check performed? If yes, include rotation criteria (No), (Yes, ≤10 deg.), (Yes, ≤5 deg.)	Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4? (Yes/ No)	Valve repair status (repaired or not repaired)
Peach Bottom	2	MO-2-01A-074	Main Steam	MSL Drain Inboard Isolation to Condenser	3	Close	No	Low	Not Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2014	Not Repaired
Peach Bottom	2	MO-2-01A-077	Main Steam	MSL Drain Outboard Isolation to Condenser	3	Close	No	Low	Not Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2014	Not Repaired
Peach Bottom	3	MO-3-01A-074	Main Steam	MSL Drain Inboard Isolation to Condenser	3	Close	No	Low	Not Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2013	Not Repaired
Peach Bottom	3	MO-3-01A-077	Main Steam	MSL Drain Outboard Isolation to Condenser	3	Close	No	Low	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested 2017	Not Repaired
Peach Bottom	2	MO-2-02-53A	Reactor Recirc	Reactor Recirc Pump A Discharge	24	Close	No	Low	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2016	Scheduled Att. 11, Cat. C
Peach Bottom	2	MO-2-02-53B	Reactor Recirc	Reactor Recirc Pump B Discharge	24	Close	No	Low	Susceptible	Yes	No	Yes, ≤10 deg.	Yes Last Tested 2016	Scheduled Att. 11, Cat. C
Peach Bottom	3	MO-3-02-53A	Reactor Recirc	Reactor Recirc Pump A Discharge	24	Close	No	Low	Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested 2017	Scheduled Att. 11, Cat. C
Peach Bottom	3	MO-3-02-53B	Reactor Recirc	Reactor Recirc Pump B Discharge	24	Close	No	Low	Susceptible	Yes	No	Yes, ≤5 deg.	Yes Last Tested 2017	Scheduled Att. 11, Cat. C
Notes: None														

ATTACHMENT 10
Exelon Generation Plant ADDDGV Listing with Active Safety Related Applications – Three Mile Island

Plant Name	Unit	Valve ID	System	Valve Functional Description	Valve Size (inches)	Active Safety Function (Open, Close, Both)	Are multiple design basis post-accident strokes required? (Yes/No)	Expert Panel Risk Ranking (High, Medium, Low)	Result of susceptibility evaluation (susceptible or not susceptible)	Is the susceptibility evaluation in general conformance with TP16-1-112R4? (Yes/No)	Does the susceptibility evaluation rely on thread friction? If yes, was the COF greater than 0.10? (No), (Yes, >0.10), (Yes, ≤0.10)	Was an initial stem-rotation check performed? If yes, include rotation criteria (No), (Yes, ≤10 deg.), (Yes, ≤5 deg.)	Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4? (Yes/ No)	Valve repair status (repaired or not repaired)
Three Mile Island	1	DH-V-3	Decay Heat	DECAY HEAT DROP LINE CONTAINMENT ISOL	12	Open	No	High	Not Susceptible	Yes	No	Yes, ≤5 deg.	Yes, Last Tested 2017	Not Repaired
Notes: None														

ATTACHMENT 11 – SUMMARY OF REGULATORY COMMITMENTS

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The following table identifies the “no later than completion” date/outage commitments made in this document. (Any other actions discussed in the submittal represent intended or planned actions. They are described to the NRC for the NRC’s information and are not regulatory commitments.)

COMMITMENT	COMMITTED DATE OR "OUTAGE"	COMMITMENT TYPE	
		ONE-TIME ACTION (Yes/No)	Programmatic (Yes/No)
<p><u>Category A MOVs</u></p> <p>Category A MOVs to be repaired at the Oyster Creek Nuclear Generating:</p> <p><u>MOV Number</u> V-14-0034 V-14-0035</p> <p>Category A MOVs to be repaired at the James A. FitzPatrick Nuclear Power Plant:</p> <p><u>MOV Number</u> 10MOV-26A 10MOV-26B (Note A)</p> <p>Category A MOVs to be repaired at the LaSalle County Station, Units 1 and 2:</p> <p><u>MOV Number</u> 1E22-F012 2E22-F012</p>	<p><u>Outage(Year)</u> OC1R27 (2018) OC1R27 (2018)</p> <p><u>Outage(Year)</u> FPR23 (2018) FPR23 (2018)</p> <p><u>Outage(Year)</u> L1R17 (2018) L2R17 (2019)</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>No</p> <p>No</p> <p>No</p>
<p>Notes:</p> <p>Note A: James A. FitzPatrick Nuclear Power Plant will repair 10MOV-26B either during the FPR23 outage or in a 2018 RHR Work window.</p>			

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ATTACHMENT 11 – SUMMARY OF REGULATORY COMMITMENTS

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COMMITMENT	COMMITTED DATE OR "OUTAGE"	COMMITMENT TYPE	
		ONE-TIME ACTION (Yes/No)	Programmatic (Yes/No)
<p><u>Category C MOVs</u></p> <p>Category C MOVs to be repaired at the James A. FitzPatrick Nuclear Power Plant:</p> <p><u>MOV Number</u> 02-2MOV-53A (Note C) 02-2MOV-53B (Note C) 12MOV-69 (Note C)</p> <p>Category C MOVs to be repaired at the R. E. Ginna Nuclear Power Plant (Note B):</p> <p><u>MOV Number</u> 704A 704B 841 865</p> <p>Category C MOVs to be repaired at the LaSalle County Generating Station, Units 1 and 2:</p> <p><u>MOV Number</u> 1E22-F015 1E51-F013 2E22-F015</p> <p>Category C MOVs to be repaired at the Peach Bottom Atomic Power Station, Units 2 and 3:</p> <p><u>MOV Number</u> MO-2-02-053A (Note D) MO-2-02-053B (Note D) MO-3-02-053A (Note D) MO-3-02-053B (Note D)</p>	<p><u>Outage(Year)</u> FPR25 (2022) FPR25 (2022) FPR25 (2022)</p> <p><u>Outage(Year)</u> G1R42 (2020) G1R42 (2020) G1R42 (2020) G1R42 (2020)</p> <p><u>Outage(Year)</u> L1R17 (2018) L1R17 (2018) L2R17 (2019)</p> <p><u>Outage(Year)</u> P2R24 (2022) P2R24 (2022) P3R23 (2021) P3R23 (2021)</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>	<p>No</p> <p>No</p> <p>No</p> <p>No</p>
<p>Notes:</p> <p>Note B: Assuming no degradation is found, R.E. Ginna Nuclear Power Plant is planning a high strength wedge pin replacement. If stem/wedge degradation is found, a full repair in accordance with BWROG TP16-1-112 Att. 6 will be performed.</p> <p>Note C: These James A. FitzPatrick Nuclear Power Plant Group C MOVs (if not repaired) will also undergo Stem Rotation Checks and Diagnostic Testing during FPR23 (2018) and FPR24 (2020).</p> <p>Note D: These Peach Bottom Atomic Power Station, Units 2 and 3 Group C MOVs (if not repaired) will also undergo Stem Rotation Checks and Diagnostic Testing during P2R22 (2018) and P2R23 (2020) for MO-2-02-053A & 53B; P3R22 (2019) for MO-3-02-053A & 53B.</p>			