



**Nebraska Public Power District**

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NLS2017100  
December 20, 2017

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

Subject: Anchor Darling Double Disc Gate Valve Information and Status  
Cooper Nuclear Station, Docket No. 50-298, License No. DPR-46

- References:
- 1) Letter from Greg Krueger (NEI) to John Lubinski (U.S. Nuclear Regulatory Commission), Anchor Darling Double Disc Gate Valve Industry Resolution Plan Update (Project Number 689), dated August 4, 2017
  - 2) Letter from Joseph Pollock (NEI) to Brian Holian (U.S. Nuclear Regulatory Commission), NSIAC Concurrence on Anchor Darling Double Disc Gate Valve Industry Response Actions (Project Number 689), dated October 26, 2017
  - 3) BWROG Topical Report TP16-1-112, Recommendations to Resolve Flowserve 10 CFR Part 21 Notification Affecting Anchor Darling Double Disc Gate Valve Wedge Pin Failures (Revision 4)

Dear Sir or Madam:

In Reference 1, the Nuclear Energy Institute (NEI) provided the Nuclear Regulatory Commission (NRC) a resolution plan for the U.S. Nuclear Industry to address the known Anchor Darling Double Disc Gate Valve (ADDDGV) issues. Reference 2 indicated each utility will provide a listing of their Anchor Darling valve population with active safety functions along with relevant valve information, including the results of susceptibility evaluations, repair status, and a repair schedule for each susceptible valve not yet repaired. This letter serves to provide this information for Cooper Nuclear Station.

The attachment to this letter contains the following information for each ADDDGV:

- Plant Name, Unit, and 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);

ADD1  
NRR

- 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 (Reference 3) (yes/no);
- Does the susceptibility evaluation rely on thread friction (yes/no)? If yes, was the coefficient of friction (COF) greater than 0.10? For cases where thread-friction was relied upon, information is provided whether the COF was above or below 0.1;
- Was an initial stem-rotation check performed (yes/no)? If yes, include rotation criteria (i.e.  $\leq 10$  degrees or  $\leq 5$  degrees);
- Was the diagnostic test data reviewed for failure precursors described in TP16-1-112R4 (Reference 3) (yes/no);
- The valve's repair status (i.e. repaired or not repaired); and
- A repair schedule for each susceptible valve.

This letter contains no regulatory commitments.

Should you have any questions or require additional information, please contact Jim Shaw, Licensing Manager, at (402) 825-2788.

Sincerely,



John Dent, Jr.

Vice President - Nuclear and  
Chief Nuclear Officer

/dv

Attachments: Cooper Nuclear Station (CNS) Anchor Darling Double Disc Gate Valve Listing

cc: Regional Administrator w/ attachment  
USNRC - Region IV

Cooper Project Manager w/ attachment  
USNRC - NRR Plant Licensing Branch IV

Senior Resident Inspector w/ attachment  
USNRC - CNS

NPG Distribution w/o attachment

CNS Records w/ attachment

Cooper Nuclear Station (CNS) Anchor Darling Double Disc Gate Valve Listing

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? <sup>(1)</sup>  (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)
CNS	1	RR-MOV-MO53A	Reactor Recirculation	Reactor Recirc Pump A Discharge Isolation	28	Close	No	Low	Susceptible <sup>(2)</sup>	Yes	Yes, Yes (>0.10, pending) <sup>(2)</sup>	Yes, ongoing and periodic, once per cycle, ≤20 degrees <sup>(3)</sup>	Yes	Not repaired <sup>(4)</sup>
CNS	1	RR-MOV-MO53B	Reactor Recirculation	Reactor Recirc Pump B Discharge Isolation	28	Close	No	Low	Susceptible <sup>(2)</sup>	Yes	Yes, Yes (>0.10, pending) <sup>(2)</sup>	Yes, ongoing and periodic, once per cycle, ≤20 degrees <sup>(3)</sup>	Yes	Not repaired <sup>(4)</sup>
<p>(1) Applied Wedge Pin Torque must bound anticipated design basis operating torque requirements and current maximum total torque.</p> <p>(2) Weak Link Analysis is currently in development to incorporate the wedge pin subcomponent and will move this to "non-susceptible" status; final acceptance projected January 26, 2018. Exact coefficient of friction (COF) is yet to be determined.</p> <p>(3) Previous inspections used a ≤20 degrees rotation criteria. The susceptible valves will be inspected in RE30 (Fall 2018) to the rotation criteria specified in the current inspection procedure which is ≤5 degrees.</p> <p>(4) CNS has no plans for disassembly/repair planned at this time. Completion of evaluation per Note (2) will move this from priority 3b to priority 5 with no inspection required.</p>														

The following table identifies 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)
None			