



July 30, 2009

NG-09-0608
10 CFR 21.21

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555

Duane Arnold Energy Center
Docket 50-331
License No. DPR-49

10 CFR 21 Notification – Identification of Defect

Pursuant to 10 CFR 21.21(d)(3)(ii), NextEra Energy Duane Arnold is providing the required written notification of the identification of a defect. This information was initially reported to the NRC Operations Center on July 8, 2009. The NRC assigned event number 45189 to this notification.

The enclosure to this letter provides the information required by 10 CFR 21.21 (d)(4). In addition, the enclosure discusses the relevance of this issue to NextEra Energy Duane Arnold. This issue is considered to be of no adverse effect upon the health and safety of the public.

This letter contains no new commitments or changes to any existing commitments.

If you have any questions regarding this matter, please contact S. Catron at (319) 851-7234.


Richard L. Anderson
Vice President, Duane Arnold Energy Center
NextEra Energy Duane Arnold, LLC

Enclosure

CC: Administrator, Region III, USNRC
Resident Inspector, DAEC, USNRC
Project Manager, DAEC, USNRC

IE19
NRR

ENCLOSURE
NOTIFICATION PER 10 CFR 21.21(D)(3)(ii)

This notification follows the format of and addresses the requirements contained in 10 CFR 21.21(d)(4)(i) – (viii).

(i) Name and address of the individual or individuals informing the Commission.

Richard L. Anderson
Vice President, Duane Arnold Energy Center
NextEra Energy Duane Arnold, LLC
3277 DAEC Road
Palo, IA 52324-9785

(ii) Identification of the facility, the activity, or the basic component supplied for such facility or such activity within the United States which fails to comply or contains a defect.

Facility:

NextEra Energy Duane Arnold
Duane Arnold Energy Center
3277 DAEC Road
Palo, IA 52324-9785

Basic Component

Miller series A63B2N Air Cylinder Actuator for a Control Valve. Supplied by Flowserve US, Inc as a basic component in April 2008 under purchase order K114296.

(iii) Identification of the firm constructing the facility or supplying the basic component which fails to comply or contains the defect.

Supplied by (dedicating entity):

Flowserve US, Inc
Raleigh Operations
PO Box 1961
1900 South Saunders Street
Raleigh, NC 27603

Manufactured by:

Parker Hannifin Corporation
US Industrial Cylinder Division/Hydraulics Group
500 S. Wolf Road
Des Plaines, IL 60016

(iv) Nature of the defect or failure to comply and the safety hazard which is created or could be created by such defect or failure to comply.

Nature of the defect:

The specific defect is insufficient clearance between the spring and the inside of the cylinder of the actuator for a Miller series A63B2N air cylinder actuator for a control valve (CV-1956A, Control Building Chiller Discharge to Emergency Service Water Isolation). The resulting improper clearance caused an increase in running load, which caused the valve to become stuck in the closed position

Safety hazard which could be created by such defect:

The lack of spring to actuator clearance resulted in a loss of capability of CV-1956A to perform its intended safety function of providing a safety related seismic discharge path for cooling water from the safety related Control Building Chiller, 1V-CH-1A. The Chiller was declared inoperable as a result of this failure to comply and, on July 1, 2009 was determined to have resulted in a substantial safety hazard.

(v) The date on which the information of such a defect or failure to comply was obtained.

The control valve actuator was supplied under purchase order K114296, dated 3/18/08. The order was accepted by a receipt inspection dated 4/09/08.

On 4/17/09, the actuator and control valve were installed per plant modification.

On 5/10/09, during surveillance testing, the control valve failed to open to perform its intended safety function of providing a discharge path for Emergency Service Water from the Control Building Chiller.

On 5/13/09, investigations determined that the valve actuator spring clearance was inadequate. Subsequent discussions with the manufacturer determined that due to a design input error; the outside diameter for the installed actuator springs was in excess of design tolerances.

(vi) In the case of a basic component which contains a defect or fails to comply, the number and location of all such components in use at, supplied for, or being supplied for one or more facilities or activities subject to the regulations in this part.

NextEra Energy has verified that no other safety related actuators with the incorrect valve actuator cylinder to spring clearances have been installed at the Duane Arnold Energy Center.

(vii) The corrective action which has been, is being, or will be taken; the name of the individual or organization responsible for the action; and the length of time that has been or will be taken to complete the action.

Corrective actions taken:

The actuator for CV-1956A was rebuilt with a replacement spring having proper dimensional clearance and higher opening force capability. The rebuilt actuator was installed by a plant modification and the control building chiller has been returned to an operable status.

Individual or organization responsible for the action:

Mark Lingenfelter, Design Engineering Manager – 319-851-7602.

Length of time that has been or will be taken to complete action:

The Control Building Chiller was made available within hours (5.65 hours) of the identification of the control valve failure by failing the control valve open in its safety function position.

The original actuator for CV-1956A was retrofitted by Parker Hannifin with a new spring of correct dimensional tolerances. The remanufactured actuator was installed on 6/19/09.

(viii) Any advice related to the defect or failure to comply about the facility, activity, or basic component that has been, is being, or will be given to purchasers or licensees.

Since NextEra Energy Duane Arnold has no information on the extent of condition with respect to other licensees supplied with control valve actuators by Flowserve US, Inc, NextEra Energy Duane Arnold has not generated any advice for other purchasers or licensees.