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Serial No. MNS-16-078

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10 CFR 21.21

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

SUBJECT: McGuire Nuclear Station, Units 1 and 2
Docket Numbers 50-369 and 50-370,
Renewed Facility Operating License NPF-9 and NPF-17

10 CFR Part 21 Written Notification
Joslyn Clark Overload Heater Element, Part No. 2455

In accordance with 10 CFR 21.21(d)(3)(ii), Duke Energy Carolinas, LLC (Duke Energy) is providing the required written notification within 30 days of the identification of a defect in Joslyn Clark Overload Heater Elements Part No. 2455. This notification was initially reported to the NRC Operations Center on September 19, 2016 (Event Number 52248). The enclosure to this letter provides the information required by 10 CFR 21.21(d)(4).

There are no regulatory commitments contained in this letter or its enclosure.

If you have any questions or need additional information regarding this matter, please contact Lee A. Hentz at (980) 875-4187.

Sincerely,

Steven D. Capps

Enclosure: 10 CFR 21.21 Written Notification

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cc: (with enclosure)

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WRITTEN REPORT PER 10 CFR 21.21(d)(4)

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

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McGuire Nuclear Station
12700 Hagers Ferry Road
Huntersville, NC 28078

(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:

McGuire Nuclear Station (McGuire), Units 1 and 2
Docket Nos. 50-369 and 50-370
Renewed License Nos. NPF-9 and NPF-17

Basic Component:

Joslyn Clark Overload Heater Element
Part Number 2455

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

Specialty Product Technology, manufacturer of Joslyn Clark Overload Heater Elements

This basic component was procured in accordance with the Duke Energy Commercial Grade Program and dedicated for use in safety related applications.

(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.

Three of 18 overload heater elements, purchased as a lot, had insufficient top weld material. One failed in-service during a post maintenance test, the second and third failed during a visual and mechanical inspection (flex test). An extent of condition review inspected over 500 similar Joslyn Clark overload heater elements. No other inventory was found with a top weld issue. The dedicated overload heater elements, from this lot, were not transferred or sold to any third party customers.

These overload heater elements are used in motor starters for the Emergency Diesel Generator (EDG) ventilation fans. This condition was discovered during post maintenance testing of the 2A EDG on July 27, 2016. None of the defective overload heater elements were installed in Operable EDG ventilation fan motor starters. The Evaluation of the deviation determined that a Substantial Safety Hazard would have

been created if the defective overload heater elements were installed and left uncorrected.

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

McGuire evaluated this condition in accordance with Duke Energy procedure AD-LS-ALL-0018 Rev. 0, "Evaluating and Reporting of Defects and Noncompliance in accordance with 10 CFR 21." The Discovery process, determination of a Deviation, was completed on August 18, 2016. The Evaluation process, determination of a Substantial Safety hazard, was completed on September 15, 2016. The Deviation was first reported to the NRC via facsimile on September 19, 2016 (EN 52248).

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

Twenty (20) Joslyn Clark Overload Heater Elements part Number 2455 were purchased in 2009 by Purchase Order 115586. Two did not pass receipt inspection (failed resistance test) and were returned to the supplier. Eighteen (18) were dedicated and checked into stock (suspect lot).

Three Overload Heater Elements from the suspect lot were installed in the 2A1 EDG ventilation fan motor starter on July 26, 2016. The fan motor tripped during the functional verification, prior to declaring the EDG Operable. Upon inspection, one element was found open at the top weld. One more opened after a flex test. All three were replaced from a different lot.

Three Overload Heater Elements from the suspect lot were installed in the 2A2 EDG ventilation fan motor starter on July 26, 2016. The fan motor completed its functional verification. Upon re-inspection and flex testing by Engineering, the three Overload Heater Element top welds were firmly attached. These were determined to be acceptable and not replaced.

Two Overload Heater Elements from the suspect lot were allocated from stock for the 2A2 EDG ventilation fan motor starter inspection but not used. One was determined to be acceptable by Engineering. One was found defective (open at top weld).

Four more Overload Heater Elements from the suspect lot were allocated from stock and inspected by Engineering (visual and flex test) prior to installation. All top welds were firmly attached. Three are installed in the 2B2 EDG ventilation fan motor starter and one is installed in the 1B2 EDG ventilation fan motor starter. Both fan motors completed their functional verification.

Six Overload Heater Elements from the suspect lot were installed in the non-safety related turbine building supply fan motor starters on April 28, 2016. These fans motors have operated successfully since April 2016. These Overload Heater Elements were not re-inspected since they are installed in a non-safety related application.

(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.

a) The following restriction (HOLD) was placed on Joslyn Clark-Elizabethtown NC by Duke Energy for all future purchase orders until actions c) and d) below are complete:

Joslyn Clark shall notify Duke Energy prior to manufacturing of all overload heaters supplied to Duke Energy, so source inspection can be performed to ensure proper weld quality (or to evaluate if internal over-checks are needed). For all other products provided by Joslyn Clark, they shall notify Duke Energy prior to final testing and release for shipment so Procurement Engineering can evaluate if additional source inspections or material over-checks are needed. This was completed on September 15, 2016.

b) An extent of condition review performed by Duke Energy Procurement Engineering inspected over 500 similar Joslyn Clark overload heater elements. No other inventory was found with a top weld issue. This was completed on October 2, 2016.

c) To address product quality issues, Specialty Product Technology, manufacturer of Joslyn Clark Overload Heater Elements, has performed a cause evaluation and is taking corrective actions to improve their welding processes. These actions are expected to be completed by October 31, 2016.

Individual Responsible for the action:

Marta O. Rosa Ramos
Senior Quality Engineer
NQA-1 Lead Auditor
Specialty Products Technologies
2100 W Broad Street
Elizabethtown, NC 28337
Office: (910) 879-5812

d) Duke Energy will revise/enhance the Commercial Grade Dedication package for the Joslyn Clark Overload Heater Elements. This action is expected to be complete by November 15, 2016.

Individual Responsible for the action:

John Yankoglu
Electrical Procurement Engineer
13339 Hagers Ferry Road
Huntersville, NC 28078
Phone: 980 875-4853

(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.

None.

(ix) In the case of an early site permit, the entities to whom an early site permit was transferred.

This event does not involve an early site permit.