

PROTECT - COMMERCIAL & CONTRACTS

Our Ref: HYA/02/24/DD/GK/02  
Unique Number: NSL/HYA/50922

Your Ref: Reply to ONR-EL-23-040

[REDACTED]  
ONR Principal Inspector - Nuclear Safety  
Redgrave Court  
Merton Road  
Bootle  
Merseyside  
L20 7HS

Date: 26<sup>th</sup> March 2024

Dear [REDACTED]

**EDF ENERGY NUCLEAR GENERATION Ltd  
HEYSHAM 1 - NUCLEAR SITE LICENCE NO 60**

**Completion of works associated with ONR Improvement Notice ref. ONR-IN-23-004**

I am writing in response to both the Enforcement Letter (ref. ONR-EL-23-040) and associated Improvement Notice (ref. ONR-IN-23-004) received on 23<sup>rd</sup> January 2024. I can now confirm that all required works and activities to address the Improvement Notice are complete (as per the programme submitted in letter NSL/HYA/50921). As such, EDF believes we have addressed all shortfalls associated with (i) Regulation 12 of the Pressure Systems Safety Regulations 2000 (PSSR) and (ii) Section 2(1) of the Health and Safety at Work etc. Act 1974 (HSWA).

As demonstrated through evidence provided during recent site visits and ongoing weekly discussions, significant work to address each aspect of the Improvement Notice has been undertaken. To summarise, the following actions and activities are now complete in relation to parts (1) and (2) of the Improvement Notice schedule.

**(1) Undertake any required examination, inspection, maintenance or testing so as to ensure that:**

- a. the manufacturer/supplier's advice in relation to changing the tail spindle thread pitch is appropriately considered and, where necessary, implemented, on any valves of the same or similar design to the 1C/SS/8 valve that failed on 23 December 2023;**
- b. the said valves are of the correct material and other design specifications as needed to ensure safety;**
- c. there are no other significant defects of concern associated with the said valves.**



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Response:

In relation to steam systems there are a number of valves of the same or similar design installed, namely the SS/8 and SS/10 valves across all 4 boilers, associated with both Reactor 1 (1A, 1B, 1C, 1D) and Reactor 2 (2A, 2B, 2C, 2D). Under the governance of the Event Recovery Organisation, we have now exchanged all of the existing Belt Eye Assemblies associated with these valves for entirely new components, designed in accordance with the updated manufacturer advice (specifically in relation to the tail spindle requirements).

For each valve rebuild, the collation of a comprehensive evidence pack of records has been undertaken, overseen by our site Quality Assurance function. Both INA and ONR have had visibility of these packs during recent site visits, for the purposes of review and sampling. In addition, as part of scoping the programme of works, a review of existing defects associated with the valves and comprehensive plant walkdowns were completed. There were no other significant defects identified; however, the Forced Outage scope did include some opportunistic work. The Boiler Handover process ensured that none of the valves returned to service had any outstanding maintenance requirements or defects.

Other than the valves described above, valves of similar design and configuration are established on the stations' feed systems, again spanning both units. A phased refurbishment and replacement strategy has been developed in relation to these components. As such, at present the valves retain their original belt assemblies with the 12tpi joint. For an operating environment where there is minimal in-service degradation, the 12tpi threads are considered fit for purpose. The Return to Service Safety Case (EC 374550) details the rationale for this, which includes the very large margin to strength limits, giving high confidence that the 12tpi design is robust in an environment where degradation is minimal. The forward strategy for works associated with the feedwater valves will be undertaken in accordance with the Fleet Technical assurance note, where a graded sampling approach is recommended, with proposed criteria to define initial targeted populations for replacement in future outages.

Company Event Recovery procedures were used to govern and manage completion of all physical works. The Event Recovery was deemed complete as the exit criteria has now been achieved. As such, the organisation has now been stood down and oversight of any residual works has transitioned back to normal business governance arrangements. INA have also undertaken a concurrence to confirm robust resolution of these issues, a copy of which has been provided to ONR.

**2) Ensure that any other information, advice or recommendations from the manufacturer/supplier is properly considered and, where necessary, implemented in relation to the said valves.**

Response:

Heysham 1 has completed a Significant Adverse Condition Investigation (SACI), which included root cause analysis of the B1C/SS/8 failure. This investigation was led by a Fleet Manager independent to the station and included a mix of SQEPs from across the fleet and Heysham 1.

The SACI team have completed an initial review of OPEX/safety notices/information notices issued by a cross section of contract partners and suppliers (including Cavendish, Trillium, GE, Altrad Babcock, Budenberg Pressure Gauges and Saunders Valves) to determine any extent of condition implications. This review sought to ensure there are no other significant safety issues which need to be addressed based on manufacturers OPEX, recommendations or guidance. Each of the organisations were asked to review their databases (including historic

previous company databases) to ensure they had no outstanding knowledge of any safety issues where they had either not informed EDF or where they had not had a response from EDF.

As one of the equipment manufacturers contacted, Trillium have specifically confirmed that no additional manufacturers guidance or OPEX exists which has not been actioned (relating to these valves or any other equipment). To verify this, both EDF and Trillium have independently reviewed 55 historic company instructions issued by Hopkinsons, Weirs and Trillium, with no shortfalls identified. More widely, no significant safety issues were identified by the other suppliers contacted and only lower level operational performance gaps were highlighted (by GE only). These were assessed by Fleet SQEPs and it has been determined they do not require urgent attention, so have been placed into normal business for the wider fleet review to close out and condition reports raised. No significant safety gaps were identified by either the SACI team or the suppliers themselves.

Both INA and ONR have had visibility of the outputs from each of these reviews during recent site visits, for the purposes of review and sampling.

As part of the SACI action plan and as a follow on activity, HYA Procurement Engineering will complete a detailed review of all Hopkinson, Weirs and Trillium OPEX/company instructions against Heysham 1 stock holdings and CAT IDs to identify if any further instances exist where CAT IDs or specifications have not been updated and actions completed.

To ensure appropriate consideration of manufacturer/supplier advice a change control for plant spares process has been in place across the fleet since 2013 - BEG/SPEC/PRO/036 - with the latest revision (Rev 004) issued in Feb 2022. This process uses the Engineering Change and Corrective Action Programme to ensure changes are implemented into our processes. As part of the SACI actions a mandatory evaluation will be established for each station to complete. This is to understand/demonstrate/evidence that the change process for plant spares is being followed at each station, and whether it is effectively implemented.

I hope that the above response (in addition to the review of evidence undertaken during recent site visits) provides sufficient information and detail to allow ONR to close the Improvement Notice. Should you require any further information or have any queries relating to this matter, please contact [REDACTED] (Heysham 1 [REDACTED]) in the first instance or myself directly.

Yours sincerely

[REDACTED]

[REDACTED]

Heysham 1 Power Station, Generation

**Distribution**

EDF Energy

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

ONR

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
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**Attachments**

None