

**ANNEX 15**  
**DECOMMISSIONING AND WASTE MANAGEMENT PLAN (DWMP) ANALYSIS**

This Annex outlines the NDA's review process and analysis of the DWMP received by the Board.

**1. REVIEW PROCESS AND CONSIDERATIONS**

- 1.1 Reviewing the DWMP is beyond the scope of the Board instructions in accordance with its Terms of Reference. To this end, the NDA was appointed by DESNZ to advise on the DWMP element of the FDP for Sizewell C.
- 1.2 The NDA reviewed version 3.0 of the DWMP, which was submitted by the Operator in November 2022. An "as-built" version of the DWMP is expected to be prepared around the time of First Criticality, and the DWMP will be updated every five (5) years following First Criticality.
- 1.3 The DWMP was considered for whether it: (i) contains realistic, clearly defined, and achievable plans for decommissioning and waste management with any technology or gaps identified; (ii) contains robust cost estimates with major project risks identified and due account taken of risk and uncertainty; and (iii) is consistent with the requirements set out in the Guidance.
- 1.4 The DWMP was reviewed based on the assumption that the Operator will be accountable for all operations and decommissioning of Sizewell C and for ensuring the decommissioning fund is adequate.
- 1.5 Following review, the NDA submitted the following documents which were reviewed by the Board:
  - (a) DWMP – NDA Assurance Review Report, January 2023 (updated June 2023), (the "**NDA Report**"); and
  - (b) DWMP – NDA Technical Advice Letter, August 2023, (the "**NDA Letter**").

**2. REVIEW FINDINGS AND RECOMMENDATIONS**

- 2.1 The DWMP, which is substantially based on the approved HPC DWMP, presents a clear narrative and understandable planning and costs basis, and is consistent with the requirements set out in the Guidance according to the NDA. Therefore, though not formally endorsed, the NDA considers the DWMP to be an accepted base plan.

**Plan Achievability**

- 2.2 The NDA found the DWMP to be coherently structured and to have a clear narrative and understandable planning basis. The NDA further noted that:
  - (a) No matters had been identified that show that the DWMP, at the current stage of Sizewell C's life cycle, would not be capable of being undertaken in accordance with the relevant safety, security, and environmental regulations; and

- (b) No significant technology or other gaps had been unaddressed at this stage in the DWMP, aside from those associated with spent fuel storage and management, which (whilst still addressed in the DWMP) are among the main changes from the HPC DWMP.

2.3 The NDA, however, recognised that the DWMP is subject to review to ensure that the next update, the “as-built” DWMP, will reflect recent operational and decommissioning experiences across UK and international practices, maturing assumptions, and changes to the regulatory framework.

### **Cost Estimates**

2.4 The total Costs of Decommissioning are estimated in the DWMP to be £7,677,000,000 base (£9,238,000,000 at “P80”<sup>1</sup>) in undiscounted August 2022 money values. The NDA deemed that the DWMP has an understandable costs basis and that the costs provide a reasonably conservative provision at the time of review, notwithstanding some of the following findings by the NDA.

- (a) The cost estimates of the HPC DWMP were used as the basis for the DWMP, with that plan’s underlying estimating methods not undergoing revision, though the Operator had accounted for changes from the HPC design, and the basis of such costs were derived using consistent methodologies.
- (b) As a result of the foregoing, the basis of costs for a significant proportion of scope is outdated, with some basis of costs being over ten (10) years old. This may have implications for the derived costs and associated contingency, and needs updating.
- (c) In line with the HPC DWMP, certain low-probability, high-consequence risks, such as land contamination, while excluded from the DWMP cost estimate are accounted for through the FDP. In particular:
  - (i) if a low-probability, high-consequence event occurs prior to the final Quinquennial Review under the FAP, the DWMP and Funding Path would be updated accordingly to ensure the increased costs are reflected in future Contributions; and
  - (ii) if a low-probability, high-consequence event occurred after the Primary Funding Period, the nominal 25% contingency uplift on the estimated P80 Costs of Decommissioning and Costs of Spent Fuel Management could be applied to cover unforeseen costs.
- (d) The DWMP costs are comparable with those of operational AGRs, adjusting for scope components and technology differences, and considering the uncertainty of decommissioning much further in the future.

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<sup>1</sup> **Note:** The NDA included a footnote in the NDA Report and NDA Letter stating that: “P80 confidence level is the probability of the cost not being exceeded e.g., it is a cost that will not be exceeded 80% of the time.”

- 2.5 The NDA noted in the NDA Report that, in relation to HPC, the HPC Operator has committed to:
- (a) take a prudent approach when making amendments or changes to the costs reported in the DWMP; and
  - (b) undertake a detailed review of the scope and cost in time for its “as-built” DWMP submission,
- and the NDA recommended that DESNZ should seek a formal commitment from Sizewell C to perform a detailed review of the relevance of scope and costs underpinning the HPC DWMP in relation to the DWMP.
- 2.6 The Operator has also committed in a letter from the Operator to the NDA dated 18 May 2022, in line with its replication strategy, to work with HPC during their revision of the HPC “as-built” DWMP to ensure that the approach undertaken meets both licensees’ expectations and for any lessons to be incorporated into the next revision of the DWMP.
- 2.7 The NDA further recommended that DESNZ should seek assurances from the Operator that its detailed review of the scope and cost is implemented in a timely way. This is to ensure that the operational knowledge and technology and associated risk and uncertainty assessments are up to date and reflect the most recent UK and international operational and decommissioning experiences.

### **Guidance Compliance**

- 2.8 The NDA found that the submission is aligned with the Guidance, and where there are operational differences from the assumptions set out in the Guidance, these have been agreed with DESNZ.
- 2.9 The Guidance states that the Secretary of State - tasked with approving the FDP - may rely on a verification report, commissioned by the Operator, which assesses costs estimates for the Designated Technical Matters and/or of any security provided to meet such costs. The verifier must be independent of the Operator and any person with obligations under the FDP.
- 2.10 The NDA concluded that the arrangements and controls the Operator has implemented to support its independent technical verification regime are suitable at this point in time, particularly as the FDP Implementation Company is in the process of being established.

### **3. NEXT STEPS**

- 3.1 The NDA expects DWMP recommendations to be addressed by the Operator at the “as-built” DWMP stage, prior to Sizewell C commencing operations.
- 3.2 The DWMP will progressively develop through the power station’s life and be updated every five years reflecting known operational experience, plant conditions, learning from decommissioning experiences elsewhere, and technological advances.

- 3.3 If, after the Operational Period and defueling, the station or the control of the Operator transfers to NDA or another publicly owned company, there is a risk that a change in approach to decommissioning programmes or timescales may lead to delays, with associated contractual changes and increased “hotel” costs. Developing practice to mitigate this risk is for the Operator and the intended decommissioning agency to cooperate to plan for a smooth transition, including a shared understanding on the approach to decommissioning, contracting, and handover. The Board recommends that a basis for such cooperation be put in place at least 6 years in advance of the end of the Operational Period, in line with international practice.<sup>2</sup>

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<sup>2</sup> See, for example:

- WANO TRANSITION TO DECOMMISSIONING ROADMAP, Roadmap to guide operators through the transition to decommissioning, WANO, October 2022;
- IAEA Technical Report Series 420, Transition from Operation to Decommissioning of Nuclear Installations, IAEA, 2004;
- NEA Report No. 7374, Preparing for Decommissioning During Operation and After Final Shutdown, OECD Nuclear Energy Agency, 2018; and
- EPRI 3002007551, Guidance for Transitioning from Operation to Decommissioning for Nuclear Power Plants, EPRI 2016.