Form 2

| Technology Information | |
|---|---|
| Area | 2 – Treatment of contaminated water (Tritium, etc.)<br>２．汚染水処理 |
| Title | BEST PRACTICABLE ENVIRONMENTAL OPTION FOR TRITIUM MANAGEMENT<br>トリチウム処理の実施可能な最高の環境問題の解決策の提案 **(AREVA 2-1-1)** |
| Submitted by | AREVA |

**1. Overview**

**Summary Descriptive**

AREVA proposes to perform a Best Practicable Environmental Option (BPEO) study for Tritium management, together with relevant Japanese stakeholders, that benefits from la Hague BPEO case feedback, covering in particular:

- Technology readiness assessment,
- Economic assessment,
- Environmental assessment.

Various Tritium management options will then be discussed.

This study will explore different de-tritiation technologies, define the best available reference technology (as for now, the tritiated water vacuum distillation system seems to be the best solution regarding Fukushima issue) and perform the corresponding basic design studies applied to Fukushima 1 site.

De-tritiation technologies are known to be efficient on non-salty effluents. Such constraint is met by AREVA's EVACRYSTAL-RAD solution presented to answer METI's specifications for the FY 2013 Subsidy Project for the Contaminated Water Issue, and its optimized versions.

**Advantages of our approach**

AREVA's approach is based on the work carried out for la Hague site releases, performed by a pluralistic working group involving industrials, universities and NGO about the tritium release evolution, the global management of such releases and its relative impact on population. This approach has been developed in coordination with the French Safety Authority (ASN).

AREVA has made in these studies an evaluation of the different techniques applicable to la Hague site that could be implemented for Tritium management as an alternative to sea release.

The working group compared the options and concluded on the Best Practicable Environmental Option (BPEO) for Tritium management in la Hague.

**2. Notes**

Technology readiness level:

AREVA has knowledge of base elements for such study, from la Hague experience.

VEOLIA - SKS & JGC should be our Japanese partners to complete basic designs of the processes studied while ensuring the integration of Fukushima specifications.

Challenges

Involve key technology providers on both de-tritiation and salt separation processes.

Gather the relevant environmental parameters for Fukushima 1 NPP.

Involve relevant Japanese stakeholders in the study.

➔ For detailed information, please refer to the private appendix.