

Suggestion of Kori-1 Decommissioning Target Facilities

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1. Introduction

On June 19, 2017, Kori-1 was permanently shut-down for decommissioning. To start its decommissioning, the utility is required to submit a FDP (Final Decommissioning Plan) to the regulator by Nuclear Safety and Security Commission Notice 2015-8 [1]. Chapter one of the FDP document, which consists of twelve chapters, should describes a summary of decommissioning project, decommissioning target facilities, and facility operating history including accident & radioactivity leakage.

This article provides results of technical reviews for overseas PDF in order to suggest the Kori-1 decommissioning target facilities for the preparation of the FDP.

2. Overseas cases

2.1 IAEA SRS (Safety Reports Series)-45[2]

IAEA SRS-45 provides a brief overview of how to describe the decommissioning target facilities such as buildings, major components and ancillary equipment. Then, subsection also provides building drawings that indicate areas within the buildings that will be included in the decommissioning process. During decommissioning, engineering schematics and system layout drawings should be given sufficient to provide a overall knowledge of the systems and major components.

2.2 YNPS DP(Yankee nuclear power station

decommissioning plan)[3]

YNPS DP classifies the facility description into 58 categories that comprise general description, major systems, buildings and components. Each category provides a brief description of the target facility's major functions, structure, materials and decommissioning configuration. In addition, detail engineering schematics are explained in the next section "decommissioning activities and planning".

2.3 BNFL: Zorita PWR Decommissioning Study[4]

Zorita PWR Decommissioning Study gives a brief overview of the plant description that has plant basic descriptions, such as Zorita NPP (nuclear power plant) buildings description. The description of buildings are Reactor Building, Turbine Building, Auxiliary Building, Evaporator Building, Radioactive Waste Temporary Storage Buildings and other Plant Buildings. Each Building provides a brief description with regard to major functions, structure, materials and drawing.

3. Kori-1

In overseas cases, the operator considered a single unit of NPP, but we must consider the presence of Kori-1 & Kori-2 together. So, consideration shall be given to some common facilities of Kori-1 and Kori-2 under the operation.



Fig. 1. Kori-1&2 satellite picture.

In the FDP, Decommissioning target facilities shall refer to all buildings associated with Kori-1. So, I suggest the decommissioning target facilities based on the Kori-1&2 arrangements. The Kori-1 buildings and common facilities that are visible in the Kori-1&2 arrangements must be classified and the systems included in each building should be added.

Table 1 shows visible buildings and common facilities:

Table 1. classified Kori-1 decommissioning target facilities

Building	Common Facility	Storage Tank
Reactor	C.W. Pump	Cond. WTR
Turbine	Demi WTR Storage TK	Fresh WTR
Auxiliary	Demi WTR Transfer PP	Rad Waste
Service	CPP Reg.	Aux BLR F.O
EDG	Emergency WTR Storage TK	EDG F.O
CC S.W.	H ₂ SO ₄ Storage TK	ETC.
STM HDR HVAC	NaOH Storage TK	
Workshop	ETC. Storage House	
MTr A/B room		

4. Conclusion

This article review overseas facility description of decommissioning plan and suggests Kori-1

decommissioning target facilities. We are more considering the following issues for the FDP. In case of common facilities, only part of a facility is estimated to be decommissioned, that decommissioning plan is described in detail in relation to the facility remaining in operation, and the impact of decommissioning activities considering the adjacent plant should be discussed.

REFERENCES

- [1] Nuclear Safety and Security Commission, Regulations of Nuclear Facilities Decommissioning Plan, such as Notice 2015-8.
- [2] IAEA, Safety Reports Series No.45 “Standard Format and Content for Safety Related Decommissioning Documents”, 2005.
- [3] Yankee Atomic Electric Company, Yankee nuclear power station decommissioning plan, Revision 0.0.
- [4] BNFL, Report to ENRESA Zorita PWR Decommissioning Study. Issue 1. 2003.