***Comments on***

**The Report “Analysis of Using Reserve AFA in Future Fuel Loadings”**

1. The proposed pattern for the 4th cycle is based on the long term fuel management plan stipulated in the appendix H of the Fuel Contract. The core pattern of the 3rd cycle has been changed during PM-2015. Therefore, the calculation shall be revised according to the final core pattern of the 3rd cycle.
2. In order to have sufficient information for decision making, the core pattern and neutron physical characteristics of the 5th and 6th cycles (Item 1 of Appendix 2 to the supplement 7) as well as using 6 FAs with 3.6% enrichment, which is supposed to be removed from the core at the end of cycle, in future cycles should be included in the report.
3. In the proposed plan for the 4th cycle, all fuel assemblies with 1.6% enrichment are placed in the outer layer of the core. Therefore, their radial power coefficients (Kq), at the beginning and the end of cycle, are 0.50 and 0.59 respectively. Consequently, the achieved burn-up of fuel assemblies with 1.6% enrichment is less than their ultimate burn-up. In other word, these fuel assemblies are not efficiently used. Therefore, it is necessary to take into consideration alternative options such as using 12 reserved FAs in two consecutive cycles (4th and 5th cycles) or any other recommended options in order to efficiently use of reserve FAs.
4. The calculation of MDNBR parameters and comparing with their maximum permissible values should be included in the report (similar to Ql values).
5. Page 24: The average enrichment of alternative option for the 4th cycle should be corrected to 3.4%.
6. The main neutron physical characteristics of the reactor core and fuel assemblies as well as calculation assumptions should be included in the report.
7. The "inlet coolant temperature at the core” should be corrected to 289.5° C, (instead of 291°C in this report) based on Ablum and FMR.
8. Based on measurement "Coolant flow rate from the core" is 86400 m3/h, but in calculation it is assumed 84000 m3/h.
9. Based on measurement the position of CR (group 1 to 9) is 362 cm, but in calculation it is 354 cm.
10. Appendix A, Table A1: "Average burn up of unloaded fuel" for alternative option should be specified.
11. Appendix A, Table A1: "The reactivity coefficient of coolant temperature" is too close to the limit. It is necessary to provide safety justification.
12. The limitation for other reactivity coefficients should be specified in the table A1 of Appendix A (if there are any).

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