Review of the Project Group:
Group Code: ABWR 23
Full title: ABWR

Intended learning outcome (ILO)	Grade (0-3)	Explanation for the grading of the evidences of achieving respective ILO. Suggestions for improvements and other comments
1. *Collect information on* General design specification of the nuclear power plant with selected reactor type (Task 1, ILO1, ILO2)	3	Overall, this Task provides a good analysis of the design improvements in the ABWR plant. The distinct and interesting features of the design are highlighted. Recommendations: • The references should be included. • Some stylistic errors should be corrected (for example, page 6. Table(?)).
2. *Describe* Operational principles of the power plant. (Task 2, ILO1, ILO2)	3	The report contains enough data to conclude that the objectives have been significantly met. The level of automation used in the ABWR was chosen with care to maintain the operators' primary control over plant operations. This Task also describes the operational staff structure for the reference ABWR control room design, which is predicated on having two operators typically stationed at the control console to promote a collaborative process to plant management and maintain operator vigilance. The Task also covers the load-following capabilities of the ABWR and how the inclusion of reactor internal pumps (RIPs) enables autonomous power changes of up to 30% of rated power using only recirculation flow control.
3. *Explain* Safety features of the power plant. (Task 3, ILO1, ILO2)	1	This chapter does not offer enough proof to show how the ABWR's emergency core cooling systems, adoption of fine motion control rod drives, automation of emergency procedures, and enhanced ability to mitigate serious accidents have all improved safety. It should be more analytical. What also seems to be missing from this section is the provision of illustrations of the safety designs so that the reader can better understand the ABWR safety systems. However, it emphasizes the thorough testing and precautions done to guarantee the effectiveness and dependability of the safety elements of the ABWR.
4. *Calculate* Selected core parameters (Task 4, ILO3)	2	Good work. The requirements of this Task were met at a high percentage.

		However, Task 4 should include one more subsection about the void fraction instead of putting it in the same subsection of pressure drop (2.3). Also, the Onset of Significant Void (OSV) should have been considered before calculating the void fraction. The channel should be divided into three regions, one before the OSV point, one between the OSV and the saturated point and one after the saturated point. Moreover, I would have liked to see more references in this Task, specifically where the equations were taken from.
5. *Calculate* CHF margins in a hot channel (Task 5, ILO4a)	3	Excellent work. All the requested plots and calculations were achieved successfully. The approach taken in the analysis is precise and well thought-out, particularly the utilization of two correlations to determine the minimum critical power ratio. The only thing that should be added is the power distribution of both hot and average channels in the same graph.
6. *Calcaulte* Maximum cladding and fuel pellet temperature (Task 6, ILO4b)	3	Amazing work on the requested task, with flawless completion of all anticipated computations and graphs. I especially liked the plots of 2D temperature fields in the fuel rod and the cladding.