P6 IEA-R1 RENEWED PRIMARY COOLANT PIPING SYSTEM STRESS ANALYSIS

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A partial replacement of the IEA-R1 piping system was conducted in 2014. The aim of this work is to perform the stress analysis of the renewed primary piping system of the IEA-R1, taking into account the as built conditions and the pipe modifications.

The nuclear research reactor IEA-R1 is a pool type reactor designed by Babcox-Willcox, which is operated by IPEN since 1957.

The primary coolant system is responsible for removing the residual heat of the Reactor core. As a part of the life management, a regular inspection detected some degradation in the primary piping system. In consequence, part of the piping system was replaced. The partial renewing of the primary piping system did not imply in major piping layout modifications. However, the stress condition of the piping systems had to be reanalyzed.

The structural stress analysis of the primary piping systems is now presented and the final results are discussed.

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P7 REFURBISHMENT OF THE IEA-R1 PRIMARY COOLANT SYSTEM PIPING SUPPORTS

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This paper presents the study and the structural analysis of the IEA-R1 primary circuit piping supports, considering all the changes involved in the piping system replacement conducted in 2014.

The IEA-R1 is a nuclear reactor for research purposes designed by Babcox-Willcox that is operated by IPEN since 1957. The reactor life management and modernization program is being conducted for the last two decades and already resulted in a series of changes, especially on the reactor coolant system. This set of components, divided in primary and secondary circuit, is responsible for the circulation of water into the core to remove heat.

In the ageing management program that includes regular inspection, some degradation was observed in the primary piping system. As result, the renewing of the piping system was carried out in 2014. Moreover the poor condition of some original piping supports gave rise to the refurbishment of all piping supports. The aim of the