

Nucleoelectrica Argentina S.A. perspective on Numerical Methods applications to Solid Mechanics in the Nuclear Industry.

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ABSTRACT

This work summarizes the last years experience and perspective of Nucleoelectrica on numerical methods implementation to solve technological problems applied to Argentinean NPPs development. With the resurgence of the Argentinean nuclear project in 2003, a variety of technical challenges have arisen with respect to Life Extension of Embalse, Atucha I and the commissioning of Atucha II. In particular, in the field of Solid Mechanics, numerical methods has been applied to give answers in different aspects as licensing, structural integrity, mechanical behaviour and evolution, state of art of components and systems and life prognosis. Among these, numerical methods have been used to contribute in the following areas: Transport Phenomena, Stress Analysis, Fatigue Analysis, Seismic Analysis, Welding, Fracture Mechanics, Structural Integrity, Irradiation Damage and Micromechanics.

The perspective is focussed on solve problems related to Life extension of Atucha I, international security standards margins adjustment, continuous improvement, systems and components modelization applied to the actual plants and the fourth Nuclear Power Plant Project.