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Recent supplying of 316L(N) stainless steel products for ASTRID

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CEA has been involved since 2006 in a substantial effort on the ASTRID (Advanced Sodium Technological Reactor for Industrial Demonstration) conceptual design, mainly in cooperation with EDF, as experienced Sodium-cooled Fast Reactor (SFR) operator, and AREVA, as experienced SFR Nuclear Island and components engineering company. Whereas previous SFRs were designed for 30 or 40 years lifetime, ASTRID should meet the Generation IV systems requirements of 60 years life time. The priority of the ASTRID material program is then given to have robust time-dependent data to design the Demonstrator. 316L(N) stainless steel and its weldments are of prime interest, as they constitute the largest components of the primary circuit and secondary pipework, components which are difficult or impossible to replace

That's why an ambitious program has been launched to supply typical products in 316L(N):

- Plates, as major products for the vessels,
- A seamless shell, for some internals, to reduce the numbers of welds,
- A thick forged part, representative of tubesheet for Intermediate Heat exchangers.

It aims at re-activating the procurement of 316L(N) products and at feeding the material data base thanks to new manufactures.

In the full paper, the requirements of the 316L(N) products will be given according to RCC-MRx Code (AFCEN Code). The main acceptance tests results will then be presented and discussed.

Country/Int. Organization

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