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Industrywide Global Efforts Toward Long Term Monitoring of Neutron Absorber Materials in Spent Fuel Pools

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Neutron absorber materials (NAMs) are used in spent fuel pools (SFPs) to maintain criticality safety margins while increasing fuel storage space. SFP lifetimes are increasing, and operating experience has documented that there are a number of pools without a coupon monitoring program or with a limited number of coupon samples remaining. To address the long-term monitoring needs globally across the industry, EPRI has initiated the development of the industrywide learning aging management program (i-LAMP) for NAM monitoring in SFPs. This program is initially focused on BORAL®, the most widely used material in SFPs—especially in the United States—and will later be extended to other metallic neutron absorber materials. In addition to participation by all U.S. utilities, several other countries (for example, Mexico, South Korea, and Taiwan) are participating in the program; the aim is to increase global participation to achieve a globally-applicable program. As part of the program, SFP water chemistries and coupon analysis results to date are being collected. From these data, analysis is performed to determine additional data needs as well as analysis for the development of the sister pool criteria and learning aging management program. The program will also allow trending, timely identification of outliers and any potential concerns, and development of an improved technical basis for guidelines and future monitoring. The paper presents the proposed i-LAMP, the components of the i-LAMP, data collected to date, and a roadmap for the development and implementation of the i-LAMP.

Do you wish to enter the YGE SFM19 Challenge?

Yes

Country or International Organization

United States of America

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