RP2020: A VISION FOR RADIATION SAFETY AT U.S. NUCLEAR POWER PLANTS IN THE 21ST CENTURY

Since the early 1990's the U.S. nuclear energy industry has shown a consistent and remarkable trend of improvement in radiation safety performance at its nuclear power plants. In the past 25 years (1981-2006), the average annual collective dose per reactor has been reduced from 7.74 Sv to 1.06 Sv and the average annual individual dose per worker has been reduced from 6.6 mSv to 1.4 mSv.

Notwithstanding the continued good trends in occupational dose, the industry identified in 2003-2004 an adverse trend in radiation protection events. This adverse trend was of particular concern because the types of events and related causes reflected performance deficiencies that were thought to have been well-resolved by contemporary programs and procedures.

In response to this adverse trend, the industry in 2005 developed and implemented a near-term action plan to prevent significant events. At the same time, the industry initiated a strategic planning framework, known as RP2020, to "reshape radiological protection at nuclear power plants to achieve significant improvements in safety performance and cost-effectiveness." RP2020 is designed to extend beyond the current operating fleet to encompass the next generation of nuclear power reactors.

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