

Human Reliability Assessment and Human Performance Evaluation: Research and Analysis Activities at the U.S. NRC

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The NRC mission "is to ensure adequate protection of the public health and safety, the common defense and security, and the environment in the use of nuclear materials in the United States..." The more specific mission of the human performance and human reliability activities at the NRC is to ensure effective risk-informed and performance-based regulation and oversight of safetycritical personnel performance in the design, operation, maintenance, decontamination, and decommissioning of nuclear reactor sites and other NRC-regulated facilities, as well as the transport, storage, and use of nuclear materials. Consistent with this mission, the Human Performance and Human Reliability Implementation Plan was developed based on the vision that human performance should not contribute to undue risk associated with the use of nuclear materials.

To implement this vision, the NRC has adopted a three-part strategy: 1) to take a proactive approach to identifying human performance and reliability issues important to public health and safety; 2) to increase knowledge of the causes and consequences of degraded human performance and reliability; and, 3) to implement the appropriate regulatory response to such issues. The mission discussed above will be accomplished through regulatory activities associated with research and analysis and with inspection and review. Six programs have been identified. The six programs include:

Development of Technical Basis

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| Program 1. | Develop the technical basis to support human performance evaluation and human reliability analysis, including the technical basis and guidance on management and organizational influences on human performance and facility risk. |
| Program 2.
human reliability. | Develop and update a model of human performance and |
| Program 3. | Foster national and international dialogue and cooperative efforts on human performance evaluation and human reliability analysis methods and data. |

Operating Event Analyses

Program 4. Conduct operating events analyses and database development to support human performance evaluation and human reliability analysis.

Review and Inspection

Program 5. Provide support to human performance and human reliability inspection and review activities of nuclear reactors.

Program 6. Provide support to human performance and human reliability inspection and review activities for nuclear materials usage.

Each of these programs will be discussed, with special emphasis on research and analysis activities. The plan will guide the agency's efforts to understand, predict, detect, prevent or mitigate the consequences of human errors that are important to the safety of NRC-regulated facilities and licensees.