

Nuclear Regulatory and Technical Assistance Programs in Support of the International Mission of the US Nuclear Regulatory Commission

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Introduction

Nuclear energy offers long-term economic and environmental benefits providing a reliable energy source with significant environmental advantages in reducing the effect of human activities on global warming.

National governments in countries operating or planning to establish nuclear facilities have instituted regulatory regimes on the use of nuclear materials and facilities to insure a high level of operational safety.

International cooperation allows addressing safety problems in an international forum going beyond national regulatory regimes and offers the potential for cooperation and promotion of common nuclear standards through international regulatory coordination

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The US NRC Office of International Programs provides overall coordination for NRC's international activities. The OIP establishes and maintains working relationships with individual countries and international nuclear organizations.

NRC has close working relations with nuclear agencies in more than 35 countries and exchange operational safety data and other regulatory information. The NRC provides assistance to countries that seek U.S. help to improve their regulatory programs.

In the early 1990s the NRC OIP established an international regulatory safety assistance program in countries with Soviet-designed nuclear reactors.

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The initial safety assistance programs provided critical training and technical knowledge of regulatory personnel using US technical experts based at NRC and DOE laboratories such as Brookhaven National Laboratory (BNL).

The international assistance, training, and technical support include wide ranging regulatory and technical areas containing a significant infrastructure component.

The regulatory bodies play a significant role in clarifying the role of TSOs, the expectation of their responsibilities, and support the TSOs efforts in improving their in-house technical capabilities and financial resources.

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Program Challenges

The technical developments performed by TSOs are primarily serving the needs of the licensing processes and regulatory decisions making sure that the methods used by industries provide adequate safety. The TSOs also need to expand their developmental horizons for potential future needs based on industry initiatives or general research directions. Regulatory reviews require certain capabilities that provide the basis for selecting the organizations serving as a TSO for the nuclear regulator, such as a) technical competency in reviewing licensee's methodology and proposed actions, b) capability of carrying out plant specific analysis, and c) have analytical capabilities, computer codes, and sufficient plant operating experience.

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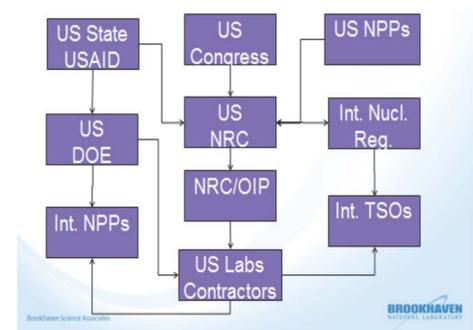
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The international assistance, training, and technical support include wide ranging regulatory and technical areas :

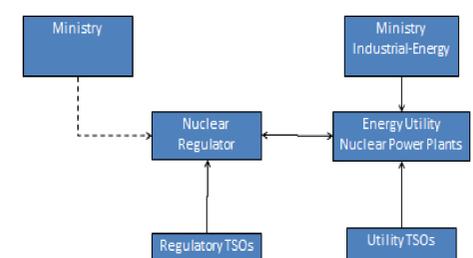
- Safety analysis methodologies, design basis analyses
- Life cycle management, maintenance optimization, support periodic safety reviews
- Licensing and inspection procedures,
- Risk informed and analytical methods
- Severe accident methodologies,
- Emergency response and infrastructure development,
- Development of regulatory guidelines and bases for regulatory actions
- Significant infrastructure component providing improvement in analytical hardware, dosimeter equipment, networking capabilities, and communication infrastructure

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US International Regulatory Support Process



Nuclear Regulatory Organizations
Common Institutional Arrangements

The NRC's nuclear regulatory assistance program has changed over the years responding to new, international developments, specifically the planned expansion of nuclear installations in countries with relatively limited nuclear regulatory infrastructure.

The program provides assistance to countries with new or expanding nuclear power programs helping to establish and maintain effective nuclear safety and security regulatory authorities.

The cooperation program assists in the development of regulatory agency infrastructure, organization, staffing, training, and also providing significant technical support, overview of laws and regulations related to nuclear industry and regulation as well as regulatory guidance.

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A limited sample of recent cooperative programs indicates a wide-ranging interest among nuclear regulators in these specific technical areas:

- Assist in improving training guidance in inspection procedures
- Assist in implementing risk-informed inspection processes, developing risk-informed regulatory regime and severe accident managements, external hazard analyses
- Seismic and structural training, seismic margin evaluations
- Information exchange on NPP license extension, aging,
- Support establishing a regulatory review framework for certified designs
- University based regulatory training
- Modification of fuel cycle facilities, decommissioning approaches.

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Conclusion

Important objectives of the US NRC's international regulatory assistance program is to strengthen the oversight capabilities and effectiveness of the foreign nuclear regulatory agencies and improve the TSO's ability to carry out the required technical supports. In each respective country, the OIP's regulatory assistance program further enhances the regulatory regimes; improve nuclear regulations and standards, which are more consistent with international and IAEA practices.

The international nature of the nuclear industry also requires the cooperation among the regulatory bodies including TSOs contributing to the development of global network of institutions, which may serve as the basis for a coordinated approach to improved nuclear regulatory methodology and increased nuclear safety.

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