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NRC REVISES REGULATIONS ON MATERIAL CONTROL AND ACCOUNTING FOR ENRICHMENT FACILITIES

The Nuclear Regulatory Commission is amending its regulations to establish material control and accounting requirements for facilities that produce enriched uranium for commercial nuclear power plants.

The new regulations include requirements to ensure that the uranium produced by enrichment facilities licensed by the NRC will be of only low strategic significance (i.e., have a uranium-235 concentration of less than 10 percent).

Naturally occurring uranium must be enriched in the isotope uranium-235, whose atoms readily undergo fission and are therefore suitable for a chain reaction, before it can be used as a fuel in nuclear power plants. Natural uranium contains about 99.3 percent uranium-238, which is not fissionable, and only about 0.7 percent uranium-235. Most U.S. nuclear power reactors use uranium that is enriched to about 2 to 4 percent in uranium-235.

The current regulations for nuclear material control and accounting are not specifically designed for uranium enrichment licensees. There are no NRC-licensed enrichment plants in the country at the present time. All U.S. enrichment facilities are owned by the Department of Energy and are not subject to NRC regulation. However, Louisiana Energy Services has applied to the NRC for a license to build and operate a privately owned enrichment plant. There is also a possibility, over a longer term, that legislation will be enacted that would put all or part of the Department of Energy's (DOE's) enrichment facilities under the jurisdiction of NRC regulations.

Although the current regulations provide adequate protection for low-enriched uranium at other types of facilities, the Commission believes that additional safeguards are needed for uranium enrichment facilities because they could be used secretly for production of high-enriched uranium or for unauthorized production of low-enriched uranium using source material that was not entered into the accounting system.

The new regulation requires licensees to implement traditional material control and accounting measures, as well as additional measures to provide specific protection at

enrichment facilities. It requires enrichment facility licensees to establish a material control and accounting system to:

- Maintain accurate, current and reliable information on source material and special nuclear material and periodically confirm its presence;
- Protect against and detect any production of uranium enriched to 10 percent or more in the isotope uranium-235;
- Protect against and detect unauthorized production of uranium of low strategic significance;
- Resolve indications of missing uranium; and
- Provide information to aid in the investigation of missing uranium, the production of uranium with a uranium-235 concentration of 10 percent or more, and the unauthorized production of uranium of low strategic significance.

Further details of the final rule are contained in a Federal Register notice published on October 31, 1991. The regulation will be effective on December 2, 1991 (30 days following publication of the Federal Register notice).

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