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NUCLEAR REGULATION

NRC's Nuclear Materials  
Program Needs Improvement  
to Protect Public Health and  
Safety

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Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to discuss the results of the work that we performed for you regarding the Nuclear Regulatory Commission's (NRC) efforts to regulate nuclear materials. NRC licenses millions of individuals, companies, and organizations throughout the United States to use various kinds of radioactive materials for research and development, medical diagnosis and treatment, and industrial, academic, and consumer activities. My testimony today is primarily based on our review of these efforts, the results of which were released on May 28, 1993, in our report entitled Nuclear Regulation: Better Criteria and Data Would Help Ensure Safety of Nuclear Materials.<sup>1</sup> For today's hearing, you specifically asked us to discuss (1) the comparability of NRC's oversight of states that have chosen to control nuclear materials themselves, known as agreement-states, with NRC's program for states that have chosen not to regulate nuclear materials, known as NRC-regulated states, and (2) the effectiveness of these programs.

Late last year, the press revealed shocking accounts of the misuse of nuclear materials, sometimes resulting in death. Whereas, the danger that a nuclear power plant will have an accident is very remote, the use of nuclear materials in areas outside the physical boundaries of nuclear power plants affects thousands of people, and has been a causal or contributing factor in at least 37 deaths since the 1960s.

In summary, our report revealed problems with the way that NRC regulates nuclear materials. It is questionable whether the public is being adequately protected from nuclear materials outside of power plants, and NRC lacks information on whether all states receive the same minimum level of protection. Our work on the report revealed that NRC does not collect comparable data for its licensing and inspection programs and that the agency does not have a common set of performance indicators to effectively gauge both the agreement-states program, which is administered in 29 states, and the NRC-regulated states program, which is administered in 21 states. Of the 23,000 licenses involving nuclear materials<sup>2</sup> as of July 1992, agreement-states regulated about two-thirds, or 15,000, of the licenses, while NRC-regulated states controlled about 8,000 licenses. Furthermore, NRC does not have specific criteria or procedures for suspending or revoking an agreement-state's program. As a result, NRC allows some of the states' programs to continue to operate without being suspended or revoked even though the states are not complying with NRC's requirements.

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<sup>1</sup>GAO/RCED-93-90, Apr. 26, 1993.

<sup>2</sup>License is a legally binding document between NRC or an agreement state, and civilian users of nuclear materials to regulate the safe use of radioactive materials.

## BACKGROUND AND SCOPE OF REVIEW

By law, NRC is responsible for regulating users of nuclear materials to ensure that these materials are safely used and controlled. The American people trust that NRC is adequately protecting them. Millions of individuals, companies, and organizations throughout the United States are able to use various kinds of radioactive materials for research and development and industrial, academic, and consumer activities. In medicine, radioactive nuclear materials are widely used for such purposes as injections to diagnose and treat diseases like cancer. However, their use can be deadly if not handled properly.

NRC administers its NRC-regulated states program in 21 states through its headquarters and five regional offices. NRC and the governors of the 29 agreement-states signed agreements declaring that NRC had discontinued its authority to regulate nuclear materials in those states and that the states had agreed to take over this responsibility. However, NRC must review agreement-states' programs periodically and can revoke or suspend all or part of an agreement if the state's program is found to be inadequate or incompatible with NRC's regulations.

We focused our work for today's hearing on the actions of NRC headquarters, NRC regional offices, and agreement-states to regulate nuclear materials. We reviewed pertinent NRC reports on reviews of the agreement-states and NRC-regulated states programs and radiation events. We visited four of the five NRC regional offices, observed NRC inspections of three licensees, visited three agreement-states, and observed three state inspections of licensees.

## NRC'S PROGRAMS NOT COMPARABLE

NRC's overall goal is to adequately protect the public and the environment from radiation, which the agency and the agreement-states fulfill by licensing users of nuclear materials, inspecting their activities, and taking enforcement actions to ensure compliance with NRC's rules and regulations. However, NRC does not have an agreed-upon common set of performance indicators that it can use to compare its agreement-states and NRC-regulated states programs. Furthermore, because its two programs are independent of each other, NRC does not require comparable data to be collected and summarized in the same format for both programs. Neither NRC headquarters and regional officials nor agreement-states officials could provide us with a list of common indicators--such as numbers of overdue inspections, radiation overexposures, or violations--that they use to measure their own program's effectiveness in attaining NRC's goal to adequately protect the public and the environment from radiation. As a result, NRC officials evaluate different information for each program to determine whether the programs are effective in meeting the goal. For example, NRC uses 29 indicators in a biennial questionnaire containing over 100 questions to evaluate the effectiveness of its agreement-states programs. But for evaluating the effectiveness of the NRC-regulated states program, NRC uses a broader questionnaire once a year that contains about 22 general questions for reviewing its regional offices' program management for goals and accomplishments.

In general, NRC uses the agreement-states questionnaire as a major tool to evaluate the compatibility and adequacy of agreement-states' programs with NRC's-regulated states program. The NRC-regulated states questionnaire, however, focuses on consistency between the five NRC regions. NRC officials recognized that there are differences between how they evaluate the effectiveness of the two programs.

In response to issues we raised about NRC's not having common performance indicators for both programs, on February 11, 1993, NRC formed a task force. The task force was created to establish common performance indicators for both programs so that common areas can be evaluated. On June 30, 1993, the task force identified seven potential programmatic performance indicators to consider in evaluating NRC's regional offices as well as the agreement-states. NRC expects to incorporate the seven programmatic indicators as well as four operational indicators in its nuclear materials program reviews that will start in 1994. In addition, NRC's Deputy Executive Director for Nuclear Materials Safety, Safeguards, and Operations Support has requested that NRC's regional administrators and selected office directors provide comments and suggestions on how both indicator classes can be considered in establishing the effectiveness of an integrated regulatory materials safety performance evaluation program.

#### Comparable Data Not Being Collected and Summarized

Partly because NRC does not have a common set of performance indicators, it does not collect comparable information in the same format for both programs. NRC also does not collect information on the two programs for the same time period. Two indicators that NRC uses to evaluate the agreement-states program demonstrate the differences with how information is collected and summarized between the two programs, namely: the number of overdue inspections and the ratio of staff to licenses. NRC considers the former to be critical to protecting public health and safety. For overdue inspections, NRC requires that both programs meet minimum established inspection frequencies by type of licensee, but it requests the number of overdue inspections only from the agreement-states. Also, NRC is not consistent in how information on overdue inspections is reported. Some agreement-states could have more overdue inspections than NRC-regulated states would because some agreement-states require more frequent inspections than NRC requires for its NRC-regulated states.

For staff ratios, the agreement-states program requires the professional staffing level to be approximately 1 to 1.5 staff per 100 licenses. On the other hand, for its NRC-regulated states program, NRC has not established any such ratios. The biennial agreement-states questionnaire requests information on staff ratios. However, for NRC-regulated states, NRC's annual questionnaire does not ask for the staff-to-licenses ratio. NRC had to create it for us because it did not exist in the same format as it did for the agreement-states.

In addition, NRC collects information for the NRC-regulated states program but not the agreement-states program on indicators such as: the numbers and types of violations that it finds, certain enforcement actions, and the resulting civil penalties or fines that are imposed. Therefore, comparisons between the two programs on these indicators can not be made. Thus, comparable

NRC statistics do not exist nationwide for determining if changes to the agreement-states program need to be made in these areas. For example, NRC does not know the total violations by type that are occurring across the country and cannot analyze, at a national level, the effect of enforcement actions.

### THE EFFECTIVENESS OF NRC'S TWO NUCLEAR MATERIALS PROGRAMS IS QUESTIONABLE

Until NRC agrees upon a common set of performance indicators that can be applied to both programs, NRC will not be able to measure objectively and quantitatively the effectiveness of its two programs. Whether all states are receiving the same minimum level of protection remains questionable. Furthermore, the information that NRC collects and reports on is incomplete, and the agency lacks clear specific criteria or procedures for suspending or revoking an agreement-state's program.

#### NRC's Information Collected Nationwide Is Incomplete

The nationwide information that NRC collects and reports to the public and the Congress is inaccurate or incomplete. Its reports such as the Quarterly Report to the Congress on Abnormal Occurrences are of limited value in identifying the significant incidents of radiation exposures occurring nationwide. NRC does not require agreement-states to report abnormal occurrences; the reports are voluntary.

We identified at least eight radiation-related deaths occurring in 1980/1981 that were not reported as abnormal occurrences in NRC's quarterly reports. If NRC's effectiveness is measured by the information being reported, it is questionable whether the public is being adequately protected from nuclear materials. According to information being reported in the press, many more deaths occurred without being reported by NRC.

NRC officials doubt the accuracy of the reporting because only 24 percent of the abnormal occurrences were reported from the 29 agreement-states, which regulate about twice as many licenses as NRC. Other NRC reports, such as its Annual Report--Nonreactors, for 1990 and 1991 appear to be similarly flawed. For the 1991 report, only 15 of the 29 agreement-states responded, events were inaccurately reported in the wrong year, and the actual occurrence date for 17 events was not shown. For the 1990 report, only 42 of the 309 events reported came from agreement-states; the number of agreement-states which reported was not stated; an internal NRC document showed 65 events in which workers were overexposed to radiation, but the report showed that only 3 events occurred; and no medical misadministrations were reported such as the wrong persons being injected or the wrong amount of nuclear material being injected into persons from agreement-states, whereas 467 such events were reported from NRC-regulated states.

## NRC Lacks Specific Criteria or Procedures to Suspend or Revoke an Agreement-State's Program

NRC has vague criteria or procedures for suspending or revoking an agreement-state's program. The criteria that NRC uses to review the agreement-states' programs are contained in its 1987 policy statement, but they are vague and appear to be contradictory. For example, the criteria for the indicator "Status and Compatibility of Regulations," an indicator that NRC considers necessary to protect public health and safety, require an agreement-state to adopt certain new NRC regulations within 3 years for the state to remain compatible with NRC. The criteria for the indicator "Personnel" require a staffing level of 1 to 1.5 staff per 100 licenses. However, NRC's policy statement on how the guidelines will be applied allows noncompliance with the requirements to occur while allowing programs to continue without being suspended or revoked. Furthermore, NRC has no specific criteria for how many and which indicators an agreement-state must be deficient in, or for how long the program may remain deficient, before NRC will suspend or revoke a state's agreement.

In NRC's most recent biennial assessments of the agreement-states programs we reviewed, NRC was not able to make a finding that five state programs were adequate to protect public health and safety. One state had 130 licensees overdue for inspection and another had a staff-to-100-licenses ratio of 0.81, which are not considered by NRC's policy statement to be sufficient to maintain a viable program. In 13 agreement-states, NRC was unable to make a finding that the states' programs were compatible with NRC's regulatory requirements. One state had not adopted 10 regulations within the required 3 years and had not had compatible regulations for approximately 6 years. In every one of these instances, NRC did not temporarily suspend or revoke the agreement-state's program.

Idaho's experience, discussed below, demonstrates the consequences of NRC's reluctance to revoke a state's program. Idaho's agreement-state program was the only one returned to NRC, and the state governor--not NRC--initiated the action in 1991. Although NRC had identified long-standing staffing and funding problems with Idaho's program, it did not temporarily suspend or revoke the program. In fact, NRC was aware of problems in Idaho as early as October 1987 but continued to find the state program adequate for protecting the public and compatible with NRC's regulations. For example, in October 1987, NRC reported that Idaho's program was adequate and compatible with NRC's program, even though Idaho had no full-time staff qualified and experienced in regulating radioactive materials, as NRC required, and the state had not adopted two regulations needed to maintain compatibility with NRC's program. Subsequent reviews also showed problems such as increasing overdue inspections and the fact that Idaho did not include additional personnel positions needed for the program.

## CONCLUSION

Whether the public is being adequately protected by a state-regulated or NRC-regulated program is questionable. Information being collected on NRC's two programs is not comparable, and without common performance indicators, it is not clear if NRC's goal to adequately protect the public from nuclear materials is being met. NRC needs to develop performance indicators.

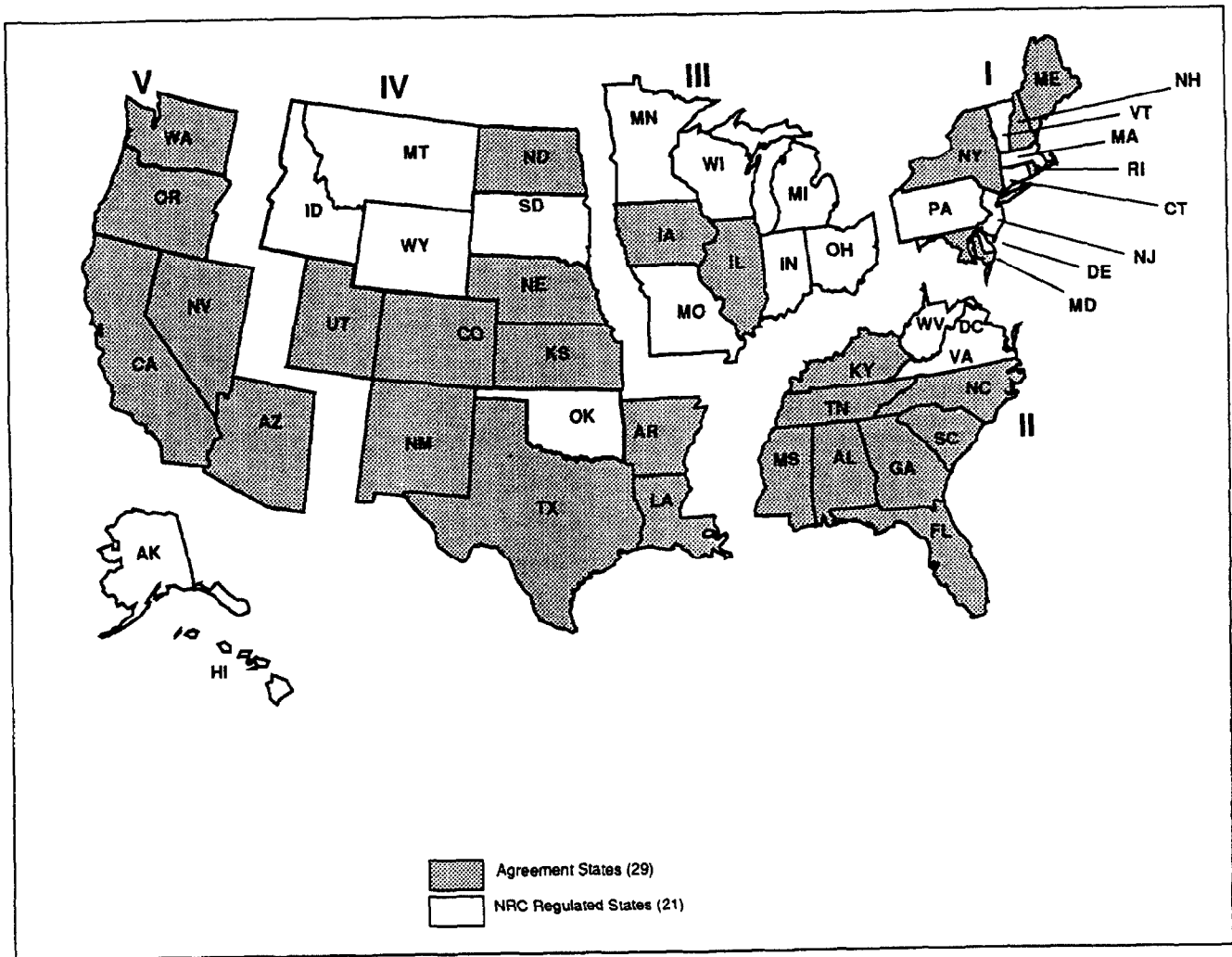
that can be used and measured in both programs. NRC needs to ensure that incidents are correctly reported, and the agency needs to become more aggressive with agreement-states if it wants the states to be more timely in complying with its rules and regulations. In the report you released on May 28, 1993, we cited a number of recommendations to the Chairman, NRC, for better performance indicators and oversight of agreement-states and NRC-regulated states programs. All the recommendations were made with the intent to help NRC provide the public with a higher comfort level that it is being adequately protected from nuclear materials.

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Mr. Chairman, this concludes my statement. I would be pleased to respond to any questions that you or Members of the Subcommittee may have.

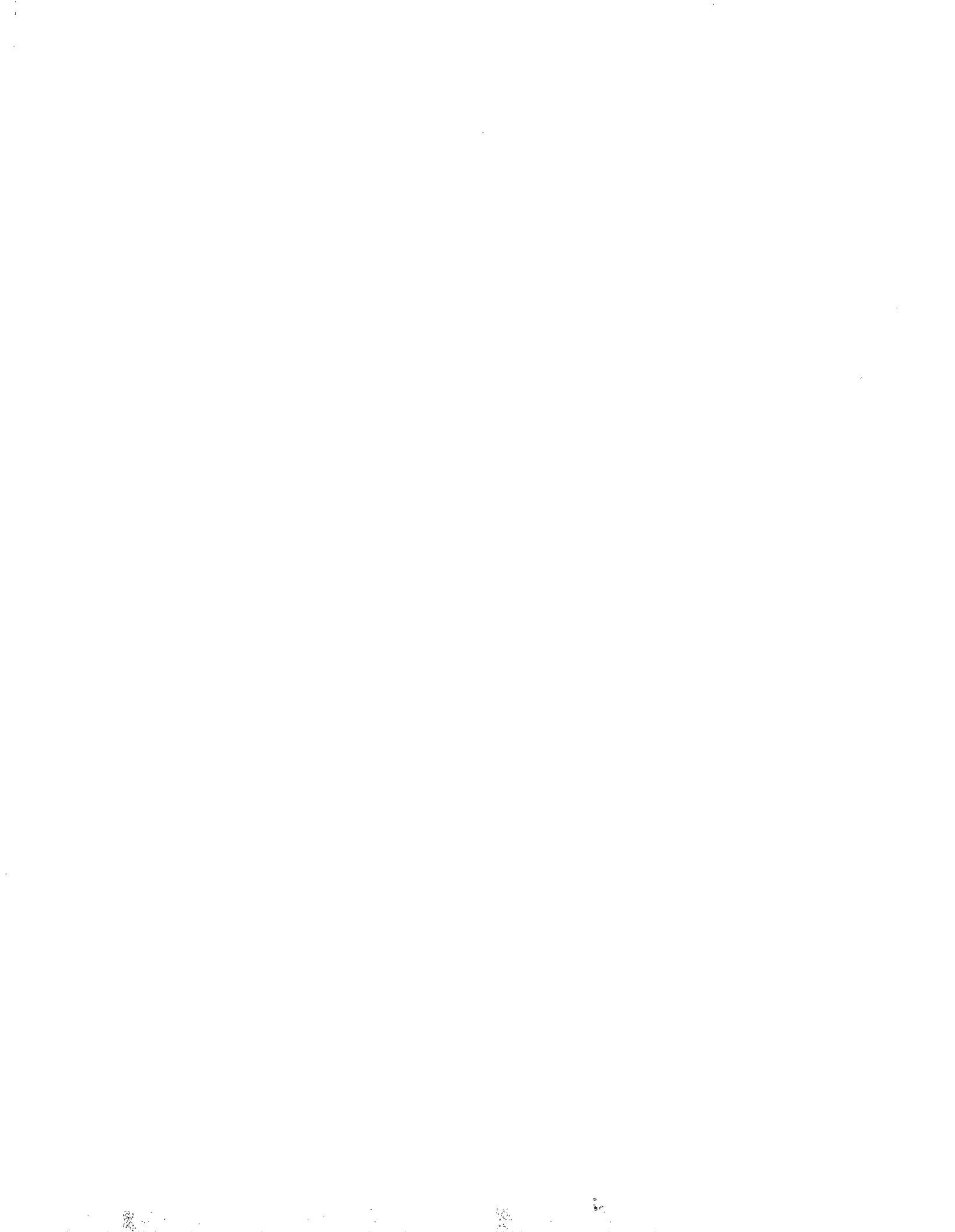


NUCLEAR REGULATORY COMMISSION REGIONS I-V



Source: NRC data.

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