

Enclosures:

- 1. Safety Guides for Water Cooled Nuclear Power Units
- 2. Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal Pumps
- 3. Thermal Shock to Pressure Vessels
- 4. Industrial Sabotage

JUN 25 1970

Chairman Seaborg
 Commissioner Ramey
 Commissioner Johnson
 Commissioner Thompson
 Commissioner Larson

ISSUANCE OF SAFETY GUIDES

Applicants or prospective applicants for nuclear power reactor licenses receive guidance as to the acceptability of specific safety-related design features from AEC regulations (Parts 20, 50, and 100) and from AEC decisions made as to similar features in previous licensing cases. There is need for an expeditious means of providing additional guidance to applicants on the acceptability of proposed design features. Issuance of more specific AEC regulations can be a lengthy process because of the review time needed and the procedural requirements that must be satisfied. Guidance from previous cases is often inadequate because of differences between individual reactors which may not be readily apparent to applicants.

I am planning to augment the guidance given to industry by formal regulations by issuance of public statements of positions that the regulatory staff and the ACRS have developed on specific safety issues related to water-cooled nuclear power reactors. The statements of regulatory positions will be accompanied by a discussion of the reasoning which led to the positions. These positions will be called safety guides. They will be distributed as they are developed to licensees, applicants and prospective applicants, and to any other group or individual requesting them. They will be issued by the Director of Regulation after ACRS concurrence on their technical content. A preamble explaining the purpose of the guides and the first three safety guides are enclosed as Appendix "A." A list of guides presently under development is attached as Appendix "B."

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These safety guides would not be regulatory requirements, and use of them in the licensing process would be at the option of the applicant. The safety guides would, however, specifically identify safety issues that should be considered in the design and in the evaluation of reactors. The guides will describe a set of principles and specifications which will represent an acceptable solution to the staff and ACRS on these issues. If an applicant chooses to adopt the solutions described in the guides, it will have assurance that the solution will be acceptable to the regulatory staff. If a different solution is proposed, the present procedure of evaluating the solution on an individual basis will be followed.

We believe such safety guides have the potential for reducing the present uncertainties in the licensing process and also have the potential for reducing regulatory staff and ACRS workload on individual cases since less review of individual designs will be required. We intend to devote a substantial effort to the preparation of these guides. Guides have been used before on various aspects of licensing and regulatory matters and we believe that they have been helpful to applicants.

Provision is made for comments or suggestions from interested parties as to revisions or improvements in the safety guides. All such suggestions will be given full consideration by the staff and ACRS. Safety guides that essentially follow positions previously set by precedent in individual licensing cases will be accompanied by a general statement that suggestions for changes in the guides are encouraged. In the case of guides which set forth major new positions taken in previous licensing cases, the accompanying statement will invite interested parties to comment within a specific time period after issuance, usually 60 days. The nature of these guides is such that they can and will be revised from time to time as later information or experience is gained, where upon a new guide would be issued superseding the old one.

We would like to discuss the safety guide concept with the Commission at an early meeting. If there are no objections, a press release

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similar to Appendix "C" will be issued and the preamble and the first three safety guides (Appendix "A") will be made publicly available.

(Signed) HLP

Harold L. Price
Director of Regulation

Enclosures:

- 1. Appendix "A"
- 2. Appendix "B"
- 3. Appendix "C"

cc w/encls:

- Secretary (2)
- General Manager (2)
- General Counsel (2)

- bec:
- H. L. Price, DR
 - P. A. Morris, DRL
 - E. C. Case, DRS
 - R. G. Smith, DRS
 - C. K. Beck, DR
 - S. H. Hanauer, DR
 - M. M. Mann, DR
 - C. L. Henderson, DR

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DATE ▶	6/17/70	6/18/70	6/19/70	6/22/70	6/25/70

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APPENDIX A

SAFETY GUIDES
FOR WATER-COOLED NUCLEAR POWER UNITS

In the Atomic Energy Commission's reactor licensing process, an applicant for a construction permit or an operating license is required to provide assurance that the principal design criteria for a facility encompass all those design features needed to prevent undue risk to the health and safety of the public. Some guidance as to the acceptability of particular design features needed to implement this general requirement has been provided in AEC regulations, particularly 10 CFR Parts 50 and 100, and in proposed amendments to those regulations. In a number of areas, however, no guidance has yet been published and decisions on the adequacy of specific safety related design features are made in individual licensing actions on a case-by-case basis.

The actions taken in individual licensing cases at both the construction permit and operating license stages have established acceptable solutions to a number of safety issues related to water-cooled nuclear power reactor units. The primary purpose of the safety guides set forth below and others to be added later is to make available to the industry solutions that are acceptable to the regulatory staff and the Advisory Committee on Reactor Safeguards (ACRS) on certain safety issues. In areas where no general solutions have been established, such solutions may be developed in the future and issued as safety guides.

Compliance with the safety guides is not required, but the guides serve to identify specifically safety issues that should be considered in the design and in the evaluation of reactors, and describe a set of principles and specifications which, if satisfied, will represent an acceptable solution of these issues to the regulatory staff and the ACRS. Solutions different from those set out in the guides will be acceptable if they provide a basis for the findings requisite to the issuance of a construction permit or operating license by the Commission.

A small number of safety guides on specific issues are attached hereto. Additional guides on other issues are under preparation and will be distributed as they are completed. Published guides may also be revised periodically as new information becomes available. Comments and suggestions for improvements in these guides or proposals for alternative resolutions of the issues involved, accompanied by pertinent technical substantiation, are encouraged.

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2	Thermal Shock to Pressure Vessels	2.1
3	Industrial Sabotage	3.1

APPENDIX B

SAFETY GUIDES UNDER DEVELOPMENT

1. Loss-Of-Coolant Accident Assumptions - Boiling Water Reactors
2. Loss-Of-Coolant Accident Assumptions - Pressurized Water Reactors
3. Fuel Handling Accident Assumptions
4. Steam Line Break Accident Assumptions - Boiling Water Reactors
5. Fuel Storage Facility Design Basis
6. Seismic Instrumentation
7. Independence of Onsite Power Sources and Distribution Systems
8. Criteria for the Rating of Emergency Diesel Generators
9. Vibration Monitoring
10. Reactor Coolant System Leak Detection
11. Cadweld Reinforcing Bar Splice Test Sampling
12. Testing of Reinforcing Bars for Concrete Structures
13. Radiological Environmental Monitoring
14. Control of Combustible Gas Concentrations Following a Loss-of-Coolant Accident
15. Design Basis for Pressurized Water Reactor Dry Containments
16. Reactor Vessel Cavity Design

APPENDIX C

AEC DEVELOPS SAFETY GUIDES FOR NUCLEAR POWER PLANT UNITS

A series of safety guides are being developed by the Atomic Energy Commission Regulatory Staff to provide guidance to the nuclear power industry on the acceptability of specific safety-related design features of light water cooled nuclear power plants.

In the Commission's reactor licensing process, an applicant for a nuclear power plant construction permit must provide assurance that the principal design criteria for the facility encompass all those design features needed to protect the public health and safety. Some guidance as to acceptability of designs is provided in AEC regulations. However, in a number of areas no guidance has been published and decisions on the adequacy of specific safety related design features have been made in individual licensing actions on a case-by-case basis.

The primary purpose of the safety guides is to make available to the industry positions that have been developed by the Regulatory Staff and the Commission's Advisory Committee on Reactor Safeguards on certain safety issues. The safety guides are not regulatory requirements and compliance with them is not required. They will, however, specifically identify safety issues that should be considered in the design and in the evaluation of reactors and will describe a set of principles and

specifications which will represent an acceptable solution to the Regulatory Staff and Advisory Committee on Reactor Safeguards on these issues. If different solutions are chosen by an applicant, the present procedure of evaluation on an individual basis will be followed.

Three safety guides have been developed and others are being prepared. The guides also may be revised periodically as new information becomes available. Comments and suggestions for improvements in the guides or proposals for alternative resolution of the issues, together with technical substantiation, are encouraged.

As they become available, the safety guides will be distributed to licensees, applicants, prospective applicants, and to any other group or individual requesting them. Such requests should be sent to the Director, Division of Reactor Standards, U. S. Atomic Energy Commission, Washington, D. C. 20545.

The numbers and titles of the first three guides are:

- #1. Net Positive Suction Head for Emergency Core Cooling and Containment Heat Removal Pumps
- #2. Thermal Shock to Pressure Vessels
- #3. Industrial Sabotage