

APPENDIX A

COARSE SCREENING OF 10 CFR 50 AND 100

TABLE OF CONTENTS

| <u>Section</u> | | <u>Page</u> |
|----------------|------------------------------------|-------------|
| A.1 | Coarse Screening of Part 50 | A-1 |
| A.2 | Coarse Screening of Part 100 | A-5 |

LIST OF TABLES

| <u>Table</u> | | <u>Page</u> |
|--------------|---|-------------|
| A-1 | Part 50 Regulations and Appendices that have no relevance to Risk-Informing | A-1 |
| A-2 | Part 50 Regulations potentially relevant to Risk-Informing | A-4 |
| A-3 | Part 100 Regulations that have no relevance to Risk-Informing | A-5 |
| A-4 | Part 100 Regulations potentially relevant to Risk-Informing | A-5 |

APPENDIX A

A.1 Coarse Screening of Part 50

Out of a total of 82 regulations and 17 published Appendices under Part 50, the following 57 regulations and 8 Appendices, as listed below in Table A-1, have no relevance to risk-informing.

Table A-1 Part 50 Regulations and Appendices that have no relevance to Risk-Informing

| | |
|---|---|
| General Provisions | |
| 50.1 | Basis, purpose, and procedures applicable |
| Requirement of License, Exceptions | |
| 50.10 | License required. |
| 50.11 | Exceptions and exemptions from licensing requirements. |
| 50.13 | Attacks and destructive acts by enemies of the United States; and defense activities. |
| Classification and Description of Licenses | |
| 50.20 | Two classes of licenses. |
| 50.21 | Class 104 licenses; for medical therapy and research and development facilities. |
| 50.22 | Class 103 licenses; for commercial and industrial facilities. |
| 50.23 | Construction permits. |
| Applications for Licenses, Form, Contents, Ineligibility of Certain Applicants | |
| 50.30 | Filing of applications for licenses; oath or affirmation. |
| 50.31 | Combining applications. |
| 50.32 | Elimination of repetition. |
| 50.33a | Information requested by the Attorney General for antitrust review. |
| 50.34a | Design objectives for equipment to control releases of radioactive material in effluents -- nuclear power reactors. |
| 50.35 | Issuance of construction permits. |
| 50.36a | Technical specifications on effluents from nuclear power reactors. |
| 50.36b | Environmental conditions. |
| 50.37 | Agreement limiting access to Restricted Data. |
| 50.38 | Ineligibility of certain applicants. |
| 50.39 | Public inspection of applications. |
| Standards for Licenses and Construction Permits | |
| 50.40 | Common standards. |
| 50.41 | Additional standards for class 104 licenses. |
| 50.42 | Additional standards for class 103 licenses. |
| 50.43 | Additional standards and provisions affecting class 103 licenses for commercial power. |
| 50.45 | Standards for construction permits. |

Table A-1 Part 50 Regulations and Appendices that have no relevance to Risk-Informing

| Issuance, Limitations, and Conditions of Licenses and Construction Permits | |
|---|---|
| 50.50 | Issuance of licenses and construction permits. |
| 50.51 | Continuation of license. |
| 50.52 | Combining licenses. |
| 50.53 | Jurisdictional limitations. |
| 50.55 | Conditions of construction permits. |
| 50.56 | Conversion of construction permit to license; or amendment of license. |
| 50.57 | Issuance of operating license. |
| 50.58 | Hearings and report of the Advisory Committee on Reactor Safeguards. |
| 50.64 | Limitations on the use of highly enriched uranium (HEU) in domestic non-power reactors. |
| Inspections, Records, Reports, Notifications | |
| 50.70 | Inspections. |
| 50.71 | Maintenance of records, making of reports. |
| 50.72 | Immediate notification requirements for operating nuclear power reactors. |
| 50.74 | Notification of change in operator or senior operator status. |
| 50.75 | Reporting and record keeping for decommissioning planning. |
| US/IAEA Safeguards Agreement | |
| 50.78 | Installation information and verification. |
| Transfers of Licenses -- Creditors' Rights -- Surrender of Licenses | |
| 50.80 | Transfer of licenses. |
| 50.81 | Creditor regulations. |
| 50.82 | Termination of license. |
| Amendment of License or Construction Permit at Request of Holder | |
| 50.90 | Application for amendment of license or construction permit. |
| 50.91 | Notice for public comment; State consultation. |
| Revocation, Suspension, Modification, Amendment of Licenses and Construction Permits, Emergency Operations by the Commission | |
| 50.100 | Revocation, suspension, modification of licenses and construction permits for cause. |
| 50.101 | Retaking possession of special nuclear material. |
| 50.102 | Commission order for operation after revocation. |
| 50.103 | Suspension and operation in war or national emergency. |

Table A-1 Part 50 Regulations and Appendices that have no relevance to Risk-Informing

| Enforcement | |
|---|--|
| 50.110 Violations. | |
| 50.111 Criminal penalties. | |
| 50.120 Training and qualification of nuclear power plant personnel. | |
| Appendix C: | A Guide for the Financial Data and Related Information Required To Establish Financial Qualifications for Facility Construction Permits |
| Appendix F: | Policy Relating to the Siting of Fuel Reprocessing Plants and Related Waste Management Facilities (Not relevant to reactors) |
| Appendix H: | Reactor Vessel Material Surveillance Program Requirements |
| Appendix I: | Numerical Guides for Design Objectives and Limiting Conditions for Operation to Meet the Criterion "As Low as is Reasonably Achievable" for Radioactive Material in Light-Water-Cooled Nuclear Power Reactor Effluents (applicable to routine emissions) |
| Appendix L: | Information Requested by the Attorney General for Antitrust Review of Facility License Applications |
| Appendix M: | Standardization of Design; Manufacture of Nuclear Power Reactors; Construction and Operation of Nuclear Power Reactors Manufactured Pursuant to Commission License |
| Appendix N: | Standardization of Nuclear Power Plant Designs: Licenses to Construct and Operate Nuclear Power Reactors of Duplicate Design at Multiple Sites |
| Appendix O: | Standardization of Design: Staff Review of Standard Designs |

The remaining 23 regulations and 9 Appendices to Part 50, as listed below in Table A-2, have a potential relevance to the risk-informed process. The relevance, however, may only be indirect or partial in some cases. As mentioned above, a second screening will need to be carried out to determine those that have a direct relevance to accident prevention and/or mitigation.

Table A-2 Part 50 Regulations potentially relevant to Risk-Informing

| | |
|-------------|--|
| 50.2 | Definitions |
| 50.12 | Specific exemptions. |
| 50.33 | Contents of applications; general information. |
| 50.34 | Contents of applications; technical information |
| 50.36 | Technical specifications. |
| 50.44 | Standards for combustible gas control system in light-water-cooled power reactors. |
| 50.46 | Acceptance criteria for emergency core cooling systems for light-water nuclear power reactors. |
| 50.47 | Emergency plans.* |
| 50.48 | Fire protection.* |
| 50.49 | Environmental qualification of electric equipment important to safety for nuclear power plants. |
| 50.54 | Conditions of licenses. |
| 50.55a | Codes and standards. |
| 50.59 | Changes, tests and experiments. |
| 50.60 | Acceptance criteria for fracture prevention measures for lightwater nuclear power reactors for normal operation. |
| 50.61 | Fracture toughness requirements for protection against pressurized thermal shock events.* |
| 50.62 | Requirements for reduction of risk from anticipated transients without scram (ATWS) events for light-water-cooled nuclear power plants. |
| 50.63 | Loss of all alternating current power. |
| 50.65 | Requirements for monitoring the effectiveness of maintenance at nuclear power plants. (Eff. July 10, 1996) |
| 50.66 | Requirements for thermal annealing of the reactor pressure vessel. |
| 50.68 | Criticality accident requirements. |
| 50.73 | License event report system. |
| 50.92 | Issuance of amendment. |
| Appendix A: | General Design Criteria for Nuclear Power Plants |
| Appendix B: | Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants |
| Appendix E: | Emergency Planning and Preparedness for Production and Utilization Facilities (Partly relevant if EP for advanced reactors is different based on risk) |
| Appendix G: | Fracture Toughness Requirements (Maybe relevant) |
| Appendix J: | Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors |
| Appendix K: | ECCS Evaluation Models |
| Appendix Q: | Pre-application Early Review of Site Suitability Issues (Partly relevant) |
| Appendix R: | Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979 |
| Appendix S: | Earthquake Engineering Criteria for Nuclear Power Plants (Partly relevant) |

*50.47, 50.48 and 50.61 are not part of the scope of this effort; these regulations are being addressed under other programs.

A.2 Coarse Screening of Part 100

Part 100, "Reactor Site Criteria", deals with the factors that influence the approval of a site for locating and constructing a nuclear power plant and the criteria to be used in arriving at a decision on site selection. Public health and safety and the development of emergency plans are cited as important criteria in this regard and it is stated in Part 100.1 "Purpose" that "the primary factors that determine public health and safety are reactor design, construction, and operation." This implies that the provisions of Part 100, like those of Part 50, are also suitable candidates for risk-informing.

Part 100 was significantly revised in December 1996 to reflect information derived from risk-oriented studies of the siting of nuclear power plants [4,5]. Other objectives [6] of the revision were to provide a stable regulatory basis for seismic and geologic siting and applicable earthquake engineering design of future nuclear power plants and to decouple siting criteria from design by relocating the source term and dose requirements that apply primarily to plant design into Part 50.

Part 100.1 "Purpose", Part 100.2 "Scope", and Part 100.3 "Definitions" were changed. A new Subpart B "Evaluation Factors for Stationary Power Reactor Site Applications on or After January 10, 1997" was added consisting of new paragraphs 100.20 "Factors to be considered when evaluating sites", 100.21 "Non-seismic siting criteria" and 100.23 "Geologic and seismic siting criteria". (However, the old Appendix A to Part 100 that defined the seismic and geologic siting criteria earlier has been retained unchanged. It is stated to apply to an operating license applicant or holder whose construction permit was issued prior to January 10, 1997). The older Parts 100.10 and 100.11 are now placed under Subpart A "Evaluation Factors for Stationary Power Reactor Site Applications Before January 10, 1997 and for Testing Reactors".

The same criteria that were applied to the Part 50 regulations have been applied to Part 100 to subdivide them into the 2 categories, Category 1 and Category 2, defined above. It should be noted that Parts 100.10, 100.11 of Subpart A and Appendix A to Part 100 now refer specifically to power reactor site applications received before January 10, 1997 or to testing reactors. If there are no operating license applicants or holders with construction permits issued prior to 1/10/97 who are currently seeking approval for a site to construct a commercial nuclear power plant, then it would appear that Subpart A is essentially moot. In principle, Parts 100.10 and 100.11 and Appendix A should be candidates for risk-informing.

Table A-3 Part 100 Regulations that have no relevance to Risk-Informing

| | |
|-------|---|
| 100.3 | Communications |
| 100.8 | Information collection requirements: OMB approval |

Table A-4 Part 100 Regulations potentially relevant to Risk-Informing

| | |
|---|--|
| 100.1 | Purpose |
| 100.2 | Scope |
| 100.3 | Definitions |
| 100.10 | Factors to be considered when evaluating sites |
| 100.11 | Determination of exclusion area, low population zone, and population center distance |
| 100.20 | Factors to be considered when evaluating sites |
| 100.21 | Non-seismic siting criteria |
| 100.23 | Geologic and seismic siting criteria |
| Appendix A: Seismic and Geologic Siting Criteria for Nuclear Power Plants | |