DUKE POWER COMPANY
P.O. BOX 33189
CHARLOTTE, N.C. 28242

HAL B. TUCKER
VICE PRESIDENT
NUCLEAR PRODUCTION

TELEPHONE
(704) 373-4531

January 10, 1983

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Ms. E. G. Adensam, Chief
Licensing Branch No. 4

Re: Catawba Nuclear Station
Docket Nos. 50-413 and 50-414

Dear Mr. Denton:

My letter of November 30, 1982 transmitted a response to Question 100.4 which requested an evaluation to demonstrate that the Catawba Nuclear Station, Units 1 and 2, met the pertinent regulatory requirements of Title 10 of the Code of Federal Regulations. A number of typographical errors in that response have been corrected and the attached evaluation replaces the previous submittal in its entirety.

Very truly yours,

H. B. Tucker/ROS

Hal B. Tucker

ROS/php
Attachment

cc: Mr. James P. O'Reilly, Regional Administrator
U. S. Nuclear Regulatory Commission
Region II
101 Marietta Street, Suite 3100
Atlanta, Georgia 30303

Mr. P. K. Van Doorn
NRC Resident Inspector
Catawba Nuclear Station

Mr. Robert Guild, Esq.
Attorney-at-Law
P. O. Box 12097
Charleston, South Carolina 29412

Palmetto Alliance
2135½ Devine Street
Columbia, South Carolina 29205

B001

8301130038 830110
PDR ADOCK 05000413
A PDR

cc: Mr. Jesse L. Riley
Carolina Environmental Study Group
854 Henley Place
Charlotte, North Carolina 28207

Mr. Henry A. Presler, Chairman
Charlotte-Mecklenburg Environmental Coalition
943 Henley Place
Charlotte, North Carolina 28207

COMPLIANCE OF CATAWBA NUCLEAR STATION WITH THE NRC REGULATIONS OF 10 CFR PARTS 20, 50, AND 100

Regulation (10 CFR)	Compliance
20.1(a)	This regulation merely states the general purpose for which the Part 20 regulations are established and does not impose any independent obligations on licensees.
20.1(b)	This regulation describes the overall purpose of the Part 20 regulations to control the possession, use and transfer of licensed material by any licensee, such that the total dose to an individual will not exceed the standards prescribed therein. It does not impose any independent obligations on licensees.
20.1(c)	Conformance to the ALARA principle stated in this regulation is ensured by the implementation of Duke policies and appropriate Technical Specifications and health physics procedures. Chapters 11 and 12 of the FSAR describe the specific equipment and design features utilized in this effort.
20.2	This regulation merely establishes the applicability of the Part 20 regulations and imposes no independent obligations on those licensees to which they apply.
20.3	The definitions contained in this regulation are adhered to in all appropriate Technical Specifications and procedures, and in applicable sections of the FSAR.
20.4	The units of radiation dose specified in this regulation are accepted and conformed to in all applicable station procedures.
20.5	The units of radioactivity specified in this regulation are accepted and conformed to in all applicable station procedures.
20.6	This regulation governs the interpretation of regulations by the NRC and does not impose independent obligations on licensees.
20.7	This regulation gives the address of the NRC and does not impose independent obligations on licensees.
20.101	The radiation dose limits specified in this regulation are complied with through the implementation of and adherence to administrative policies and controls and appropriate health physics procedures developed for this purpose. Conformance is documented by the use of appropriate personnel monitoring devices and the maintenance of all required records.

Regulation (10 CFR)	Compliance
20.102	When required by this regulation, the accumulated dose for any individual permitted to exceed the exposure limits specified in 20.101(a) is determined by the use of Form NRC-4. Appropriate health physics procedures and administrative policies control this process.
20.103(a)	Compliance with this regulation is ensured through the implementation of appropriate health physics procedures relating to air sampling for radioactive materials, and bioassay of individuals for internal contamination. Administrative policies and controls provide adequate margins of safety for the protection of individuals against intake of radioactive materials. The systems and equipment described in Chapters 11 and 12 of the FSAR provide the capability to minimize these hazards.
20.103(b)	Appropriate process and engineering controls and equipment, as described in Chapters 11 and 12 of the FSAR, are installed and operated to maintain levels of airborne radioactivity as low as practicable. When necessary, as determined by station administrative guidelines, additional precautionary procedures are utilized to limit the potential for intake of radioactive materials.
20.103(c)	The Catawba respiratory protection program implements the requirements of this regulation by ensuring the proper use of approved respiratory protection equipment. The Catawba respiratory protection program incorporates fully the recommendations of Regulatory Guide 8.15, "Acceptable Programs for Respiratory Protection."
20.103(d)	This regulation describes further restrictions which the Commission may impose on licensees. It does not impose any independent obligations on licensees.
20.103(e)	Duke Power Company uses only tested and certified respiratory equipment. Therefore, application for this authorization is not required.
20.103(f)	The respiratory protection program is in full conformance with the requirements of 20.103(c).
20.103(g)	Duke Power Company will make this notification within the prescribed time. Respiratory equipment is not now in use at the Catawba Nuclear Station.
20.104	Conformance with this regulation is assured by appropriate Duke Power Company policies regarding employment of individuals under the age of 18 and the Duke Power Company System Health Physics Manual restricting these individuals' access to restricted areas.

Regulation (10 CFR)	Compliance
20.105(a)	Chapter 11 of the FSAR provides the information and related radiation dose assessments specified by this regulation.
20.105(b)	The radiation dose rate limits specified in this regulation are complied with through the implementation of procedures, Technical Specifications, and administrative policies which control the use and transfer of radioactive materials. Appropriate surveys and monitoring devices document this compliance.
20.106(a)	Conformance with the limits specified in this regulation is assured through the implementation of procedures and applicable Technical Spedifications which provide adequate sampling and anslyses, and monitoring of radioactive materials in effluents before and during their release. The level of radioactivity in station effluents is minimized to the extent practicable by the use of appropriate equipment designed for this purpose, as described in Chapter 11 of the FSAR.
20.106(b) 20.106(c)	Duke Power Company has not and does not intend to include in any license or amendment applications proposed limits higher than those specified in 20.106(a), as provided for in these regulations.
20.106(d)	Appropriate allowances for dilution and dispersion of radioactive effluents are made in conformance with this regulation, and are described in detail in Chapter 11 of the FSAR, and in appropriate reports required by the Technical Specifications.
20.106(e)	This regulation provides criteria by which the Commission may impose further limitations on releases of radioactive materials made by a licensee. It imposes no independent obligations on licensees.
20.106(f)	This regulation merely states that the provisions of 20.106 do not apply to disposal of radioactive material into sanitary sewerage systems. It imposes no independent obligations on licensees.
20.107	This regulation merely clarifies that the Part 20 regulations are not intended to apply to the intentional exposure of patients to radiation for the purpose of medical diagnosis or therapy. It does not impose any independent obligations on licensees.
20.108	Necessary bioassay equipment and procedures, including Whole Body Counting, are utilized at Catawba Nuclear Station to determine exposure of individuals to concentrations of radioactive materials. Appropriate health physics procedures and administrative policies implement this requirement.

Regulation (10 CFR)	Compliance
20.201	The surveys required by this regulation are performed at adequate frequencies and contain such detail as to be consistent with the radiation hazard being evaluated. When necessary, the Radiation Work Permit system established at the station provides for detailed physical surveys of equipment, structures and work sites to determine appropriate levels of radiation protection. The Duke Power Company System Health Physics Manual and applicable station health physics procedures require these surveys and provide for their documentation in such manner as to ensure compliance with the regulations of 10 CFR Part 20.
20.202(a)	The System Health Physics Manual and applicable station health physics procedures set forth policies and practices which ensure that all individuals are supplied with, and required to use, appropriate personnel monitoring equipment. The Radiation Work Permit system is established to provide additional control of personnel working in radiation areas and to ensure that the level of protection afforded to these individuals is consistent with the radiological hazards in the work place.
20.202(b)	The terminology set forth in this regulation is accepted and conformed to in all applicable station procedures, Technical Specifications, and those portions of the System Health Physics Manual in which its use is made.
20.203(a)	All materials used for labeling, posting, or otherwise designating radiation hazards or radioactive materials, and using the radiation symbol, conform to the conventional design prescribed in this regulation.
20.203(b)	This regulation is conformed to through the implementation of appropriate station health physics procedures and portions of the System Health Physics Manual relating to posting of radiation areas, as defined in 10 CFR Part 20.202(b)(2).
20.203(c)	The requirements of this regulation for "High Radiation Areas" are conformed to by the implementation of the Technical Specifications and appropriate station health physics procedures, as well as the System Health Physics Manual. The controls and other protective measures set forth in the regulation are maintained under the surveillance of the station Health Physics group.
20.203(d)	Each Airborne Radioactivity Area, as defined in this regulation, is required to be posted by provisions of the System Health Physics Manual and appropriate station health physics procedures. These procedures also provide for the surveillance requirements necessary to determine airborne radioactivity levels.

Regulation (10 CFR)	Compliance
20.203(e)	The area and room posting requirements set forth in this regulation pertaining to radioactive materials are complied with through the implementation of appropriate station health physics procedures, and portions of the System Health Physics Manual.
20.203(f)	The container labeling requirements set forth in this regulation are complied with through the implementation of appropriate station health physics procedures, and portions of the System Health Physics Manual.
20.204	The posting requirement exceptions described in this regulation are used where appropriate and necessary at Catawba Nuclear Station. Adequate controls are provided within the station health physics procedures to assure safe and proper application of these exceptions.
20.205	All of the requirements of this regulation pertaining to procedures for picking up, receiving, and opening packages of radioactive materials are implemented by the System Health Physics Manual and appropriate station health physics procedures. These procedures also provide for the necessary documentation to ensure an auditable record of compliance.
20.206	The requirements of 10 CFR 19.12 referred to by this regulation are satisfied by the orientation training conducted at Catawba Nuclear Station. Appropriate departmental procedures set forth requirements for all employees who frequent or work at Catawba Nuclear Station to receive this instruction on a periodic basis.
20.207	The storage and control requirements for licensed materials in unrestricted areas are conformed to and documented through the implementation of station health physics procedures and applicable portions of the System Health Physics Manual.
20.301	The general requirements for waste disposal set forth in this regulation are complied with through station operating procedures, Technical Specifications, and the provisions of the station license.
20.302	No such application for proposed disposal procedures, as described in this regulation, has been made or is contemplated by Duke Power Company.
20.303	No plans for waste disposal by release into sanitary sewerage systems, as provided for in this regulation, are contemplated by Duke Power Company, nor is this practice currently utilized.

Regulation (10 CFR)	Compliance
20.305	Specific authorization, as described in this regulation, is not currently being sought by Duke Power Company for treatment or disposal of wastes by incineration.
20.306	Duke Power rad waste procedures and Catawba Nuclear Station Technical Specifications will assure compliance with this regulation.
20.401	All of the requirements of this regulation are complied with through the implementation of appropriate Technical Specifications and station procedures pertaining to records of surveys, radiation monitoring and waste disposal. The retention periods specified for such records are also provided for in these specifications and in station and departmental procedures.
20.402	Catawba Nuclear Station has established an appropriate inventory and control program to ensure strict accountability for all licensed radioactive materials Reports of theft or loss of licensed material are required by reference to the regulations of 10 CFR in the Technical Specifications.
20.403	Notifications of incidents, as described in this regulation, are assured by the requirements of the Technical Specifications, the System Health Physics Manual and appropriate station procedures, which also provide for the necessary assessments to determine the occurrence of such incidents.
20.405	Reports of overexposures to radiation and the occurrence of excessive levels and concentrations, as required by this regulation, are provided for by reference in the Technical Specifications and in appropriate health physics procedures.
20.407	The personnel monitoring report required by this regulation is expressly provided for by the Technical Specifications. Appropriate health physics procedures establish the data base from which this report is generated.
20.408	The report of radiation exposure required by this regulation upon termination of an individual's employment or work assignment is generated through the provisions of Duke Power Company procedures.
20.409	The notification and reporting requirements of this regulation, and those referred to by it, are satisfied by the provisions of Duke Power Company procedures.
20.501	This regulation provides for the granting of exemptions from 10 CFR Part 20 regulations, provided such exemptions are authorized by law and will not result in undue hazard to life or property. It does not impose independent obligations on licensees.

Regulation (10 CFR)	Compliance
20.502	This regulation describes the means by which the Commission may impose upon any licensee requirements which are in addition to the regulations of Part 20. It does not impose independent obligations on licensees.
20.601	This regulation describes the remedies which the Commission may obtain in order to enforce its regulations, and sets forth those penalties or punishments which may be imposed for violations of its rules. It does not impose any independent obligations on licensees.

Regulation (10 CFR)	Compliance
50.1	This regulation states the purpose of the Part 50 regulations and does not impose any independent obligations on licensees.
50.2	This regulation defines various terms and does not impose independent obligations on licensees.
50.3	This regulation governs the interpretation of the regulations by the NRC and does not impose independent obligations on licensees.
50.4	This regulation gives the address of the NRC and does not impose independent obligations on licensees.
50.7	This regulation describes the rights of employees of a licensee. Notice of these rights is posted at the Catawba Nuclear Station and appropriate General Office areas.
50.8	This regulation states that the NRC has approval from the OMB for the collection of information specified in this regulation. This regulation does not impose any independent obligations on the licensee.
50.10 50.11	These regulations specify the types of activities that may not be undertaken without a license from the NRC. Duke Power Company does not propose to conduct any such activities at Catawba Nuclear Station without an NRC license.
50.12	This regulation provides for the granting of exemptions from 10 CFR Part 50 regulations, provided such exemptions are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest. It does not impose independent obligations on licensees.
50.13	This regulation says that a license applicant need not design against acts of war. It imposes no independent obligations on licensees.
50.20 50.21 50.22 50.23	These regulations merely describe the types of licenses that the NRC issues. They do not address the substantive requirements that an applicant must satisfy to qualify for such licenses.
50.30	This regulation sets down procedural requirements for the filing of license applications, such as the number of copies of the application that must be provided the NRC. Duke Power Company has substantially complied with the procedural requirements in effect at the time when filing its license application and the amendments to it. In particular, 10 CFR 50.30(f) requires that a license application must be accompanied by

Regulation (10 CFR)	Compliance
	any Environmental Report required pursuant to 10 CFR Part 51, and Duke Power Company has submitted an Environmental Report covering Catawba Nuclear Station.
50.31 50.32	These regulations merely permit more efficient organization of the license application and impose no independent obligations on licensees.
50.33	This regulation requires the license application to contain certain general information, such as an identification of the applicant, information about the applicant's financial qualifications, and a list of regulatory agencies with jurisdication over the applicant's rates and services. This information was provided in the Catawba Nuclear Station operating license application.
50.33a	This regulation requires applicants for construction permits to submit information required for antitrust review. The antitrust review required by the Atomic Energy Act of 1954, as amended, was performed at the construction permit stage.
50.34(a)	This regulation governs the contents of the Preliminary Safety Analysis Report and is relevant to the construction permit stage rather than the operating license stage.
50.34(b)	A Final Safety Analysis Report (FSAR) has been prepared and submitted, which addresses in the chapters indicated the information required: (1) site evaluation factors - Chapter 2 (2) structures, systems, and components - Chapters 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 15 (3) radioactive effluents and radiation protection - Chapters 11 and 12 (4) design and performance evaluation - ECCS performance is discussed and shown to meet the requirements of 10 CFR 50.46 in Chapters 6 and 15 (5) results of research programs - Chapter 1 (6) (i) organizational structure - Chapter 13 (ii) managerial and administrative controls - Chapters 13 and 17. Chapter 17 discusses compliance with the quality assurance requirements of Appendix B

Regulation (10 CFR)	Compliance
	(iii) plans for preoperational testing and initial operations - Chapter 14
	(iv) plans for conduct of normal operations - Chapters 13 and 17. Surveillance and periodic testing is specified in the Technical Specifications
	(v) plans for coping with emergencies - Emergency Plan (Chapter 13)
	(vi) Technical Specifications - prepared in conjunction with the Staff (Chapter 16)
	(vii) as discussed in various FSAR sections, the major safety-related structures, systems, and components are not shared between units. Section 1.2.2.13 identifies those structures, systems, and components that are shared. Station operating procedures provide for separation were necessary. Control of access is discussed in the Security Plan
	(7) technical qualifications - Chapter 13
	(8) operator requalification program - Chapter 13
50.34(c)	A physical security plan was prepared and submitted as required by this regulation for Catawba Nuclear Station.
50.34(d)	A safeguards contingency plan has been prepared and submitted as required by this regulation for Catawba Nuclear Station.
50.34(e)	Duke Power administrative and document control procedures protect plans and other related Safeguards Information against unauthorized disclosure in accordance with 10 CFR 73.21.
50.34(f)	This regulation applies only to applicants for construction permits as of February 16, 1982. However, the response to TMI-related items is described in FSAR Section 1.9.
50.34(g)	This regulation applies only to applicants for operating licenses or construction permits docketed after May 17, 1982. Catawba Nuclear Station was docketed prior to May 17, 1982.
50.34a	This regulation requires the inclusion of the design objectives for equipment used to control relases of radioactive material in effluents of nuclear power reactors into the application for construction permit and operating license. Chapter 11 of the Catawba FSAR provides the required information concerning the radioactive waste management system at the Catawba Nuclear Station.

Regulation (10 CFR)	Compliance
50.35	This regulation is relevant to the construction permit stage rather than the operating license stage.
50.36	Technical Specifications have been prepared and implemented, including items in each of the categories specified, including: (1) safety limits and limiting safety settings, (2) limiting conditions for operation, (3) surveillance requirements, (4) design features, and (5) administrative controls.
50.36a	The Catawba Nuclear Station Technical Specifications include specifications which require compliance with 10 CFR 50.34a (releases as low as is reasonably achievable), and that ensure that concentrations of radioactive effluents released to unrestricted areas are within the limits specified in 10 CFR 20.106. The reporting requirements of 10 CFR 50.36a (a)(2) are also included in these specifications.
50.37	This regulation requires the applicant to agree to limit access to Restricted Data. Duke Power Company's agreement to do so is contained in the operating license application for Catawba Nuclear Station.
50.38	This regulation prohibits the NRC from issuing a license to foreign-controlled entities. Duke Power Company's statement that is is not owned, controlled, or dominated by an alien, foreign corporation, or foreign government is contained in the operating license application for Catawba Nuclear Station.
50.39	This regulation provides that applications and related documents may be made available for public inspection. This imposes no direct obligations on applicants and licensees.
50.40	This regulation provides considerations to "guide" the Commission in granting licenses as follows:
50.40(a)	The design and operation of the facility is to provide reasonable assurance that the applicant will comply with NRC regulations, including those in 10 CFR Part 20, and that the health and safety of the public will not be endangered. The basis for Duke Power Company's assurance that the regulations will be met and the public protected is contained in this enclosure and in the license application and the related correspondence over the years. Moreover, the lengthy process by which the plant is designed, constructed, and reviewed, including reviews by Duke Power Company's own staff, the NRC staff, the ACRS, and NRC licensing boards, provides a great deal of assurance that the public health and safety will not be affected.
50.40(b)	This regulation provides that no consideration of financial qualifications is necessary for an electric utility applicant

Regulation (10 CFR)	Compliance
	at the operating license stage. The technical qualifications of Duke Power Company are discussed in FSAR Section 13.1.
50.40(c)	Another consideration is that the issuance of the license is not to be inimical to the common defense and security or to the health and safety of the public. The individual showings of compliance with particular regulations contained in this enclosure as well as the contents of the entire FSAR and related correspondence over the years, plus the lengthy process of design, construction, and review by Duke Power Company, its NSSS vendor, and the government, provide Duke Power Company with considerable assurance that the license will not be inimical to the health and safety of the public. As for the common defense and the security, there is considerable assurance that the license will not be inimical in that Duke Power Company has a viable security plan for Catawba Nuclear Station that Duke Power Company is not controlled by agents of foreign countries, and that Duke Power Company has agreed to limit access to Restricted Data (see above).
50.40(d)	The final 50.40 "consideration" is that the applicable requirements of Part 51 have been satisifed. Part 51 concerns compliance with the National Environmental Policy Act of 1969. Duke Power Company submitted an Environmental Report as part of the operating license application.
50 41	This regulation applies to class 104 licensees, such as those for devices used in medical therapy. Catawba Nuclear Station has not applied for a class 104 license, and so 50.41 is not applicable.
50.42	Section 50.42 provides additional "considerations" to "guide" the Commission in issuing Class 103 licenses. The two considerations are: (a) that the proposed activities will serve a useful purpose proportionate to the quantities of special nuclear material or source material to be utilized and (b) that due account will be taken of the antitrust advice provided by the Attorney General under subsection 105c of the Atomic Energy Act. The "useful purpose" to be served is the production of electric power. The need for the power was determined by the licensing board at the construction permit stage. Although conditions affecting the need for power are constantly changing, Duke Power Company periodically makes load projections, and in Duke Power Company's judgment the need for Catawba Nuclear Station is still substantial. As for the amount of special nuclear material or source material used, there is no reason to believe that their proportion in relation to the power produced is substantially greater than that of other commercial power reactors in this country. As for the antitrust advice of the Attorney General, as noted above, the antitrust review was done at the construction permit stage.

Regulation (10 CFR)	Compliance
50.43	This regulation imposes certain duties on the NRC and addresses the applicability of the Federal Power Act and the right of government agencies to obtain NRC licenses. It imposes no direct obligations on licensees.
50.44	The Catawba Nuclear Station combustible gas control system is described in FSAR Section 6.2.5. The system is designed to maintain the hydrogen concentration in containment at a safe level following a LOCA, without purging the containment atmosphere, as specified in 10 CFR 50.44(e). The system consists of internal recombiners, a hydrogen analyzer, and a hydrogen skimmer system. The containment recirculation system and hydrogen purge system complement the recombiner system. Catawba Nuclear Station meets the requirements of NUREG-0660 and NUREG-0694. The requirements of 10 CFR 50.44 are satisfied.
50.45	This regulation provides standards for construction permits rather than operating licenses and is therfore not material to this operating license proceeding.
50.46	FSAR Sections 6.3 and 15.6.5 describe the Emergency Core Cooling System and the methods used to analyze ECCS performance following a postulated loss of coolant accident. In FSAR Section 15.6.5, Duke Power Company provided the results of a LOCA-ECCS analysis for Catawba Nuclear Station using an NRC approved evaluation model, which is in compliance with Appendix K to 10 CFR 50. The analysis, based on an overall peaking factor (Fq) of 2.32, provided results in compliance with the criteria of 10 CFR 50.46(b). The Fq limit will be reflected in the Technical Specifications.
50.47	The Radiological Emergency Plan was submitted to the NRC as a separate document at the same time the FSAR was filed.
50.48	The Fire Protection System is described in Section 9.5 of the FSAR. An evaluation of the fire protection plan which demonstrates compliance with 10 CFR 50 Appendix R was included as Appendix D to the Catawba Nuclear Station Response to Appendix A to BTP-APCSB 9.5-1, dated August 1981.
50.50	This regulation provides that the NRC will issue a license upon determining that the application meets the standards and requirements of the Atomic Energy Act and the regulations and that the necessary notifications to other agencies or bodies have been duly made. It imposes no direct obligations on licensees.
50.51	This regulation specifies the maximum duration of licenses. Compliance will be affected simply by the Commission's writing the license so as to comply.

Regulation (10 CFR)	Compliance
50.52	This regulation provides for the combining in a single license of a number of activities. It imposes no independent obligation on the licensee.
50.53	This regulation provides that licenses are not to be issued for activities that are not under or within the jurisdiction of the United States. The operation of Catawba Nuclear Station will be within the United States and subject to the jurisdiction of the United States, as is evident from the description of the facility in the operating license application.
50.54	This regulation specifies certain conditions that are incorporated in every license issued. Compliance is effected simply by including these conditions in the license when it is issued. Indeed, much of 50.54 merely provides that other provisions of the law apply, which would be the case even without 50.54.
50.55	This regulation addresses conditions of construction permits, not operating licenses, and so it is not relevent at this point.
50.55a(a)(1)	Various chapters of the FSAR discuss design, fabrication, erection, construction, testing, and inspection of safety-related equipment. For example, Chapter 14 provides information on testing of safety-related systems. Chapter 17 provides information concerning the Quality Assurance Program that was utilized. As a further example of a specific system, FSAR Section 5.2, "Integrity of the Reactor Coolant System Boundary," discusses the design of the reactor coolant system.
50.55a(a)(2)	This paragraph is a general paragraph leading into paragraphs (c) through (i) of the regulation.
50.55a(b)(1) 50.55a(b)(2)	These paragraphs provide guidance concerning the approved Edition and Addenda of Section III and XI of the ASME B&PV Code.
50.55a(c)	Reactor coolant system components were designed and fabricated in accordance with these regulations except for the Unit 1 reactor vessel which was designed and fabricated to ASME Section III, 1971 Edition through Winter 1971 Addenda as discussed in FSAR Section 5.2.1.1. Additional information on reactor coolant system components can be found in Chapters 3 and 5 of the FSAR.
50.55a(g)	Inservice Inspection (ISI) requirements are delineated in this part and are specified in the Technical Specifications. The Catawba inservice inspection program is delineated in Section 6.6 of the FSAR.

Regulation (10 CFR)	Compliance
50.55a(h)	As discussed in Chapter 7, the protection systems meet IEEE 279-1971.
50.55a(i)	Fracture toughness requirements are set forth in Appendices G and H of 10 CFR 50. Technical Specifications require the use of reactor vessel material irradiation surveillance specimens and updating of the "heatup" and "cooldown" curves given in the Technical Specifications. Further information is given in FSAR Section 5.3 concerning the irradiation surveillance program.
50.55a(j)	This regulation applies only to the construction permit stage.
50.55e	This regulation is only proposed, 39 Federal Regulation 26297, and applies to fuel reprocessing plants.
50.56	This regulation provides that the Commission will, in the absence of good cause shown to the contrary, issue an operating license upon completion of the construction of a facility in compliance with the terms and conditions of the construction permit. This imposes no independent obligations on the applicant.
50.57(a)	This regulation requires the Commission to make certain findings before the issuance of an operating license. These findings for Catawba Nuclear Station can be made for the reasons given in this enclosure generally. Specifically: (1) Construction of the facility is being completed in conformity with the construction permit and the application as amended. Conformance of the facility to the NRC rules and regulations and the Act, as implemented by the regulations, has been demonstrated by the application. (2) The Technical Specifications and resulting operating procedures provide assurance that the facility will operate in conformity with the application as amended and with the rules and regulations, with the noted exceptions to 10 CFR 50. (3) The application demonstrates that the facility can be operated without endangering the health and safety of the public and in compliance with the regulations, as noted above. (4) The application demonstrates that Duke Power Company is technically and financially qualified to operate the unit. (5) The applicable provisions of 10 CFR 140 have been satisfied.

Regulation (10 CFR)	Compliance
	(6) The Catawba Security Plan assures that special nuclear material will be appropriately safeguarded. The application demonstrates that the operation of the facility will not be inimical to the health and safety of the public.
50.57(b)	The license, as issued, will contain appropriate conditions to assure that items of construction or modification are completed on a schedule acceptable to the Commission.
50.57(c)	This regulation provides for a low-power testing license. Such a license has not been requested for Catawba Nuclear Station.
50.58	This regulation provides for the review and report of the Advisory Committee on Reactor Safeguards. The ACRS will review the operating license application for Catawba Nuclear Station in accordance with its usual practice.
50.59	This regulation provides for the licensing of certain changes, tests, and experiments as a licensed facility. Technical Specifications and procedures provide implementation of this regulation.
50.70	The Commission has assigned a resident inspector to Catawba Nuclear Station. Duke Power Company has provided office space in accordance with the requirements of this section. Duke Power Company permits access to the station to NRC inspectors in accordance with 10 CFR 50.70(b)(3).
50.71	Records are and will be maintained in accordance with the requirements of sections (a) through (e) of this regulation and the license. Section (e) requires that the FSAR be updated within 24 months after date of issuance of operating license and annually thereafter. Such updates will be made.
50.72	Notification of significant events to the NRC will be made in accordance with the requirements in this regulation.
50.78	This regulation concerns the transmittal of installation information and verification to implement the US/IAEA Safeguards Agreement upon request of the NRC. The NRC has not requested this information.
50.80	This regulation provides that licenses may not be transferred without NRC consent. No application for transfer of a license is involved in the Catawba Nuclear Station proceeding.
50.81	This regulation permits the creation of mortgages, pledges, and liens on licensed facilities, subject to certain provisions. These provisions concern the requirements and restrictions on creditors and do not impose independent obligations on licensees.

Regulation (10 CFR)	Compliance
50.82	This regulation provides for the termination of licenses. It does not apply to Catawba Nuclear Station because Duke Power Company has not requested the termination of a license.
50.90	This regulation governs applications for amendments to licenses. Future requests for license amendments will be made in accordance with these requirements.
50.91	This regulation provides guidance to the NRC in issuing license amendments.
50.100 50.101 50.102 50.103	These regulations govern the revocation, suspension, and modifications of licenses by the Commission under unusual circumstances. No such circumstances are present in the Catawba Nuclear Station proceeding, and these regulations are not applicable.
50.109	This regulation specifies the conditions under which the NRC may require the backfitting of a facility. This regulation imposes no independent obligations on a licensee unless the NRC proposes a backfitting requirement.
50.110	This regulation governs enforcement of the Atomic Energy Act, the Energy Reorganization Act of 1974, and the NRC's regulations and orders. No enforcement action is at issue in the Catawba Nuclear Station proceeding, and so this regulation is not applicable.

Regulation (10 CFR)	Compliance
Appendix A	
GDC 1	Section 3.1 of the FSAR describes the design provisions made to ensure that these requirements are met. Codes and standards utilized for the unit are specified throughout the FSAR. Chapter 17 describes the quality assurance program and the provisions for maintenance of records.
GDC 2	FSAR Section 3.1 addresses the design considerations for natural phenomena which are described in detail in Chapters 2 and 3. Appropriate considerations have been made in the design basis for historical data, combined effects of normal and accident conditions with the effects of natural phenomena, and the importance of the safety functions to be performed.
GDC 3	FSAR Section 3.1 describes in general the measures which have been taken to minimize the probability and effects of fires and explosions. Section 9.5.1 describes the fire detection and protection systems.
GDC 4	FSAR Section 3.1 describes the design features used to accommodate the effects of and compatibility with the environmental conditions associated with all modes of operation and postulated accidents. Chapter 3 provides information concerning the specific design features for protection against missles, jet impingement and pipe rupture. Provisions for qualification of equipment for all postulated environments is described in FSAR Section 3.11.
GDC 5	As described in FSAR Section 3.1, those structures, systems, and components which are shared by both units are tabulated in FSAR Section 1.2.2.13. It is concluded that safety functions are not significantly impaired by such sharing.
GDC 10	FSAR Section 3.1 indicates that the reactor core and associated systems are designed to function throughout the design lifetime without exceeding fuel damage limits, using protection criteria specified in Section 3.1 and Chapters 4, 7, and 15.
GDC 11	FSAR Section 3.1 indicates that prompt compensatory reactivity feedback effects are assured by unit design and operational limit considerations. The core inherent reactivity feedback characteristics and reactivity control methods are described in FSAR Chapter 4.
GDC 12	FSAR Section 3.1 describes the inherent and design features which eliminate or limit the various types of oscillations. Core stability is further described in Section 4.3.

Regulation (10 CFR)	Compliance
GDC 13	As indicated in FSAR Section 3.1, and described in more detail in Chapter 7, instrumentation and control systems have been provided to monitor and maintain plant variables including those variables which affect the fission process, integrity of the reactor core, the reactor coolant pressure boundary, and the containment, over their prescribed ranges for normal operation, anticipated occurrences, and under accident conditions.
GDC 14	FSAR Section 3.1 indicates that the reactor coolant pressure boundary has been designed to accommodate the system temperatures and pressures attained under all expected operational modes and anticipated transients, and to maintain stresses within applicable limits.
GDC 15	As indicated in FSAR Section 3.1, the reactor coolant system and associated auxiliary, control and protection systems are designed to ensure the integrity of the reactor coolant pressure boundary with adequate margins during normal operations and anticipated transients. The design codes used for the Reactor Coolant System are described in Chapter 5. Details concerning the protection systems are provided in Chapter 7.
GDC 16	As described in FSAR Section 3.1 and Chapter 6, an ice condenser containment structure is provided. It is designed to sustain, without loss of required integrity, all effects of gross equipment failures, up to and including the rupture of the largest pipe in the reactor coolant system. The containment and its associated engineered safety features thus meet the required functional capability of this criteria.
GDC 17	As described in FSAR Section 3.1, onsite and offsite power systems are provided which can independently supply the electric power required for the operation of safety-related systems. This capability is maintained even with the failure of any single active component in either system. Chapter 8 provides the design details of the power systems and their compliance with this criterion.
GDC 18	As described in FSAR Section 3.1 and Chapter 8, the redundant electric power systems important to safety are continuously monitored and energized during normal plant operation from redundant offsite power sources. Redundant onsite diesel generators provide automatic backup power sources. Periodic tests of the diesel generators, the transfer system and the station batteries are made, as required by Technical Specifications.
GDC 19	FSAR Section 3.1 describes the main control room, which contains the controls and instrumentation necessary for safe operation of the unit during normal and accident conditions.

Regulation (10 CFR)	Compliance
	Sufficient shielding, distance, structural integrity, and ventilation systems are provided to ensure that control room personnel will not receive radiation exposures in excess of the criterion for the duration of the accident. In the event that access to the main control room is restricted, an auxiliary control room is provided, within the protected envelope, which may be used to bring the reactor to cold shutdown.
GDC 20	FSAR Section 3.1 discusses the design criteria for the protection system and engineered safety features actuation, to ensure that the requirements of this criterion are met. Further details are supplied in Chapter 7.
GDC 21	As indicated in FSAR Section 3.1, the protection system is designed for the high functional reliability and inservice testability commensurate with the safety functions to be performed. This section, as well as Chapter 7, describe in detail the design features provided to ensure redundancy and testability.
GDC 22	FSAR Section 3.1 indicates that the protection system has been designed to provide sufficient resistance to a broad class of accident conditions or postulated events. Chapter 7 provides further design details concerning this resistance such that independence is maintained.
GDC 23	As indicated in FSAR Section 3.1, the protection system is designed with due consideration of the most probable failure modes of the components under various perturbations of energy sources and the environment. Further details are supplied in Chapter 7.
GDC 24	FSAR Section 3.1 discusses separation of the protection and control systems, such that the failures of any signal control system component or channel or the failure or removal from service of any protection system component or channel which is common to the protection and control systems, leaves intact a system satisfying all redundancy, reliability, and independence requirements of the protection system. Details concerning separation of protection and control systems are provided in Chapter 7.
GDC 25	FSAR Section 3.1 indicates that the protection system has been designed to assure that specified acceptable fuel design limits are not exceeded in the event of any single reactivity control malfunctions, including an accidental withdrawal of control cluster groups. Further details are provided FSAR Sections 4.3.1.4 and 7.7.2.2.
GDC 26	As indicated in FSAR Section 3.1, two independent reactivity control systems of different design principles are provided.

Regulation (10 CFR)	Compliance
	One of the systems uses control rods; the second system employs dissolved boron as a chemical shim. Reactivity control system redundancy and capability are described further in Sections 4.3.1.5 and 7.7.2.2.
GDC 27	As described in FSAR Section 3.1, means are provided for shutdown reactivity for cooling the core under any anticipated condition and with appropriate margin for contingencies. Combined use of rod cluster control and chemical shim control permit the necessary shutdown margin to be maintained during the long term xenon decay and plant cooldown. These means are discussed in detail in FSAR Sections 4.3 and 7.2
GDC 28	FSAR Section 3.1 indicates that core reactivity is controlled by a chemical poison dissolved in the coolant, rod cluster assemblies and burnable poison rods. The maximum reactivity insertion rates due to withdrawal of a bank or rod cluster control assemblies or by boron dilution are limited. The maximum worth of control rods and the maximum rates of reactivity insertion employing control rods are limited to values which prevent rupture of the coolant pressure boundary or disruption of the core internals to a degree which would impair core cooling capacity. Further details are provided in Section 4.3.
GDC 29	As indicated in FSAR Section 3.1, the protection and reactivity control systems are designed to assure extremely high probability of performing their required safety functions in the event of anticipated operational occurrences. The protection system is further discussed in Section 7.2. The reactivity control systems are discussed in Sections 4.6 and 7.2.
GDC 30	As described in FSAR Section 3.1, reactor coolant pressure boundary components are designed, fabricated, inspected, and tested in conformance with ASME Section III. Major components are classified as seismic Class 1 and are accorded the quality measures appropriate to this classification. The evaluations of reactor coolant pressure boundary components are discussed in Section 5.2.
GDC 31	As indicated in FSAR Section 3.1, close control is maintained over material selection and fabrication for the reactor coolant system to ensure that the boundary behaves in a non-brittle manner. The materials testing is consistent with 10 CFR 50, Appendixes G and H. These tests ensure the selection of materials with proper toughness properties and margins as well as verify the integrity of the reactor coolant pressure boundary. Operating procedures and Technical Specifications ensure operation within the pressure-temperature limit relative to this criterion.

Regulation (10 CFR)	Compliance
GDC 32	FSAR Section 3.1 describes how the design of the reactor vessel and its arrangement in the system provides the capability for accessibility during service life to the entire internal surfaces of the vessel and certain external zones of the vessel. The reactor arrangement within the containment provides sufficient space for inspection of the external surfaces of the reactor coolant piping except for the area of pipe within the primary shielding concrete. Additional details can be found in Section 5.2.
GDC 33	As indicated in FSAR Section 3.1, the chemical and volume control system provides a means of reactor coolant makeup and adjustment of the boric acid concentration. A high degree of functional reliability and safe response to probable modes of failure is assured by provision of standby components. Details of system design are included in Section 9.3 and details of the electrical power systems are given in Sections 8.2 and 8.3.
GDC 34	FSAR Section 3.1 indicates that the residual heat removal system, in conjunction with the steam and power conversion system, is designed to transfer the fission product decay heat and other residual heat from the reactor core within acceptable limits. Suitable redundancy is accomplished below 350°F with the two residual heat removal pumps with means available for draining and monitoring of leakage, two residual heat exchangers, and the associated piping and cabling. The residual heat removal system is able to operate on either onsite or offsite electrical power. Suitable redundancy above 350°F is provided by the steam generators, auxiliary feed pumps, and attendant piping. Details of the residual heat removal system design are in FSAR Section 5.7.
GDC 35	FSAR Section 3.1 describes the use of passive accumulators with two centrifugal charging pumps and two low head safety injection pumps to provide redundancy for failure of any component in any system. The primary function of the emergency core cooling system is to deliver borated cooling water to the reactor core in the event of a loss-of-coolant accident. This limits the fuel clad temperature and thereby ensures that the core will remain substantially intact and in place, with its essential heat transfer geometry preserved. Further details are provided in Chapters 6 and 7.
GDC 36	As described in FSAR Section 3.1, design provisions are made for inspection to the extent practical of all components of the emergency core cooling system. An inspection is performed periodically to demonstrate system readiness. To the extent possible, the critical parts of the reactor vessel internals, injection nozzles, pipes, valves, and pumps are inspected

Regulation (10 CFR)	Compliance
	visually or by boroscopic examination for erosion, corrosion, and vibration wear evidence. Nondestructive inspection is performed where such techniques are desirable and appropriate. Technical Specifications require inservice inspection in accordance with applicable ASME Codes. Details of the inspection programs are provided in Chapters 5 and 6.
GDC 37	FSAR Section 3.1 indicates that the components of the emergency core cooling system located outside the containment will be accessible for leaktightness inspection during appropriate periodic tests. Each active component of the system may be individually actuated on the normal power source at any time during plant operation to demonstrate operability. The centrifugal charging pumps are part of the charging system, and this system is in continuous operation during plant operations. Actuation circuits are tested and remote-operated valves are exercised periodically. The testing is described in detail in FSAR Sections 6.3.4, 7.3, and per Technical Specification surveillance requirements.
GDC 38	As indicated in FSAR Section 3.1, the containment spray system, ice condenser, and RHR spray system are provided to remove heat from the containment following a loss-of-coolant accident. An air return system is used to circulate air and steam through the containment after the initial blowdown. This maintains proper mixing of the containment air and steam with the heat removal media for the necessary heat removal. The loss of a single active component was assumed in the design of these systems. Emergency power system arrangements ensure the proper functioning of these systems. Two electrical buses, each connected to both onsite and offsite power, feed the pump motors and the necessary valves. Further details are provided in Sections 6.2 and 8.3.
GDC 39	As indicated in Section 3.1, the ice condenser design includes provisions for visual inspections of the ice bed flow channels, doors, and cooling equipment. The air return fan system provides for visual inspection of the fans and the associated backflow dampers and for duct systems that are not embedded in concrete. The containment spray system and the residual heat removal system (ND) sprays are designed such that active and passive components can be readily inspected to demonstrate system readiness. Pressure containing systems are inspected for leaks from pump seals, valve packing, flange joints, and relief valves. During operational testing of the containment spray pumps and ND pumps, the portions of the systems subjected to pressure are inspected for leaks. System design details are given in Section 6.2.

Regulation (10 CFR)	Compliance
GDC 40	As described in FSAR Section 3.1, the containment heat removal systems described in Section 6.2 are designed to permit periodic testing so that proper operation can be assured. In some cases whole systems can be operated for test purposes. In others, individual components are operated for functional tests so that plant operations are not disrupted. The ice condenser contains no active components required to function during an accident condition. Samples of the ice are taken periodically and tested for boron concentration. The lower inlet door opening force is measured when the reactor is in the shutdown condition. The position of the lower inlet doors is monitored at all times. The top deck doors and intermediate deck doors are tested for operability during the shutdown condition. All active components of the containment spray system and the residual heat removal spray system are tested in place after installation. These spray systems receive initial flow tests to assure proper dynamic functioning. Further testing of the active components is conducted after component maintenance. Air test lines, located upstream of the spray isolation valves, are provided for testing to assure that spray nozzles are not obstructed. Testing of transfer between normal and emergency power supplies is also conducted. Air return fans and their associated backflow dampers are tested for operability while the reactor is shutdown for refueling.
GDC 41	As indicated by FSAR Section 3.1, the shield building, surrounding the primary containment, serves as a secondary containment. The annulus ventilation system (Section 6.2) maintains this secondary containment at a negative pressure during the entire post-accident period. The annulus ventilation system also collects and processes the secondary containment atmosphere. After processing, the portion of this processed air necessary to assure a negative pressure is exhausted through the plant vent. The remainder is recirculated and distributed in the secondary containment. The auxiliary building serves to collect any equipment leakage during the recirculation of containment sump water. The auxiliary building ventilation system (Section 9.4.2) is isolated by an accident signal. The auxiliary building filtered exhaust system (Section 9.4.3) processes any inleakage prior to release to the environment. Postaccident hydrogen control within the containment is provided by electrical hydrogen recombiners (Section 6.2). Distribution of the atmosphere within the containment is provided by the air return fan system (Section 7.4.6). The system also takes a suction in each compartment to prevent stagnation and excessive accumulation of hydrogen.
GDC 42	FSAR Section 1.3 indicates that the annulus ventilation system and the hydrogen recombiners are designed to permit appropriate periodic inspection of the important components.

Regulation (10 CFR)	Compliance
	Additional discussion is provided in FSAR Sections 9.4 and 6.2.
GDC 43	FSAR Section 3.1 indicates that the annulus ventilation system and the hydrogen recombiner system are designed to permit periodic pressure testing and functional testing of their components. Further details are provided in Sections 6.2 and 9.4.
GDC 44	FSAR Section 3.1 describes how a Seismic Category I Component Cooling System (KC) (Section 9.2) is provided to transfer heat from the Reactor Coolant System, reactor support equipment and engineered safety equipment to a Seismic Category I Nuclear Service Water System (RN) (Section 9.2). The KC System serves as an intermediate system and thus a barrier between potentially or normally radioactive fluids and the lake/pond water which flows in the RN System. The KC System consists of two independent engineered safety subsystems, each of which is capable of serving all necessary loads under normal or accident conditions. In addition to serving as the heat sink for the KC System, the RN System is also used as heat sink for the containment and engineered safety equipment through use of compartment and space coolers. The RN System consists of two independent loops, each of which is capable of providing all necessary heat sink requirements. The RN System transfers heat to the ultimate heat sink (Section 9.2). Electric power is discussed in Chapter 8.
GDC 45	As indicated in FSAR Section 3.1, the integrity and capability of the component cooling water system (Section 9.2) and nuclear service water system (Section 9.2) are monitored during normal operation by alternating operation of the systems between the redundant system components. Nonsafety related systems may be isolated temporarily for inspection. All major components will be visually inspected on a periodic basis. The component cooling and nuclear service water pumps are arranged such that any pump may be isolated for inspection and maintenance while maintaining full plant operational capabilities.
GDC 46	As described in FSAR Section 3.1, the cooling water systems are pressurized during plant operations; thus, the structural and leaktight integrity of each system and the operability and performance of their active components are continuously demonstrated. In addition, normally idle portions of the piping system and idle components are tested during plant shutdown. The emergency functions of the systems are periodically tested out to the final actuated device. For details, see the write-ups on Electric Power (Chapter 8), Component Cooling Water (Section 9.2), Nuclear Service Water (Section 9.2), and Instrumentation and Controls (Chapter 7).

Regulation (10 CFR)	Compliance
GDC 50	FSAR Section 3.1 indicates that the containment structure, including access openings and penetrations, is designed with sufficient conservatism to accommodate, without exceeding the design leakage rate, the transient peak pressure and temperature associated with a postulated reactor coolant piping break up to and including a double-ended rupture of the largest reactor coolant pipe. Containment design basis is discussed further in Sections 3.8 and 6.2.
GDC 51	As discussed in FSAR Section 3.1, the design condition for the containment pressure boundary is based on the parameters derived from the design basis accident. For this design condition, the steel liner material behaves in a nonbrittle manner and has the capability to minimize the propagation of any undetected flaw. Detailed information on the steel liner material is found in Section 3.8.2.
GDC 52	As indicated in FSAR 3.1, the containment design permits overpressure strength testing during construction and permits preoperational integrated leakage rate testing at calculated peak accident pressure and at reduced pressure, in accordance with Appendix J 10CFR50. The containment and other equipment which may be subjected to containment test conditions are designed so that periodic integrated leakage rate testing can be conducted at calculated peak accident pressure. The preoperational integrated leak tests at peak pressure verify that the containment, including the isolation valves and the resilient penetration seals, leaks less than the allowable value of 0.25 weight percent per day at peak accident pressure. Details concerning the conduct of periodic integrated leakage rate tests are in Section 6.2.6.
GDC 53	FSAR Section 3.1 indicates that the containment and the containment isolation system (Section 6.2) are designed so that: (1) integrated leak tests can be run during plant lifetime (see compliance to Criterion 52), (2) visual inspections can be made of all important areas, such as penetrations, (3) an appropriate surveillance program can be maintained (Section 6.2), (4) periodic testing at containment peak accident pressure of the leaktightness of isolation valves and penetrations which have resilient seals and expansion bellows is possible, and (5) the operability of the containment isolation system can be demonstrated periodically. In testing locally the resilient seals and expansion bellows leakages, the guidelines for Type B tests in Appendix J 10CFR50 will be followed.
GDC 54	As described in FSAR Section 3.1, the containment isolation features are classified as Seismic Category I. These components require quality assurance measures which enhance reliability. The containment isolation design provides for a double barrier at the containment penetration in those fluid systems that are not required to function following

Regulation (10 CFR)	Compliance
	a design basis event. All piping systems penetrating the containment, in so far as practical, have been provided with tests vents and test connections or have other provisions to allow periodic leak testing as required. Section 6.2.6 has further details on testing. See Section 6.2.4 for general containment isolation details.
GDC 55	As indicated in FSAR Section 3.1, the reactor coolant pressure boundary is defined as those piping systems and components which contain reactor coolant at design pressure and temperature. With the exception of the reactor coolant sampling lines, the entire reactor coolant pressure boundary, as defined above, is located entirely within the containment structure. All sampling lines are provided with remotely operated valves for isolation in the event of a failure. These valves also close automatically on a containment isolation signal. All other piping and components which may contain reactor coolant are low pressure, low temperature systems which would yield minimal environmental doses in the event of failure. The sampling system and low-pressure systems are described in Section 9.3. An analysis of malfunctions in these systems is included in Chapter 15.
GDC 56	As indicated in FSAR Section 3.1, at least two barriers are provided between the atmosphere outside the containment and the containment atmosphere, the reactor coolant system, or closed systems which are assumed vulnerable to accident forces. Redundant valving is provided for piping that is open to the atmosphere and to the containment atmosphere. Additional details can be found in Section 6.2.4.
GDC 57	FSAR Section 3.1 indicates that those lines that penetrate the containment, do not communicate with either the reactor coolant pressure boundary or the containment atmosphere, and are not affected by loss-of-coolant accident forces are defined as closed systems. All lines penetrating the containment are designed to meet GDC Criterion 57.
GDC 60	As described in FSAR Section 3.1, provisions for liquid, gaseous, and solid radioactive waste processing is provided. The principles of filtration, demineralization, evaporation, solidification and storage for decay are utilized as described in Sections 11.2, 11.3, and 11.4. Process monitoring is provided to control this equipment and regulate releases to the environment as described in Section 11.5.
GDC 61	FSAR Section 6.1 indicates that systems which may contain radioactivity are designed to ensure adequate safety under normal and postulated accident conditions. Components are designed and located such that appropriate periodic inspection and testing may be performed. All areas of the plant

Regulation (10 CFR)	Compliance
	are designed with suitable shielding for radiation protection based on anticipated radiation dose rates and occupancy as discussed in Section 12.1. Individual components which contain significant radioactivity are located in confined areas which are adequately ventilated through appropriate filtering systems. The spent fuel cooling systems provide cooling to remove residual heat from the fuel stored in the spent fuel pool. The system is designed for testability to permit continued heat removal. The spent fuel pool is designed such that no postulated accident could cause excessive loss of coolant inventory. Radioactive waste treatment systems are located in the auxiliary building, which contains or confines leakage under normal and accident conditions. The auxiliary building ventilation system includes charcoal filtration which minimizes radioactive material release associated with a postulated spent fuel handling accident. Fuel storage and handling is discussed in Section 9.1 and radioactive waste management in Chapter 11.
GDC 62	As noted in Section 3.1, the restraints and interlocks provided for safe handling and storage of new or spent fuel are discussed in Section 9.1. The center-to-center distance between the adjacent spent fuel assemblies is sufficient to ensure subcriticality, even if unborated water is used to fill the spent fuel storage pool. The design of the spent fuel storage rack assembly is such that it is impossible to insert the spent fuel assemblies in other than prescribed locations, thereby preventing any possibility of accidental criticality. Layout of the fuel handling area is such that the spent fuel casks will never be required to traverse the spent fuel storage pool during removal of the spent fuel assemblies.
GDC 63	FSAR Section 3.1 and Chapters 9, 11, and 12 describe the monitoring capability in the fuel storage and waste handling areas and indicates that the operator will take appropriate actions if an alarm from any of these monitors is received.
GDC 64	FSAR Section 3.1 indicates the facility contains means for monitoring the containment atmosphere and all other important areas during both normal and accident conditions to detect and measure radioactivity which could be released under any conditions. The monitoring system includes area gamma monitors, atmospheric monitors and liquid monitors with full indication in the control room. Alarms are provided to warn effluent and area radiological monitoring systems of high activity. Section 11.5 discusses the process and 11.3 describes the offsite monitoring program.
Appendix B	Chapter 17 of the FSAR describes in detail the provisions of the quality assurance program which has been implemented to meet all applicable requirements of Appendix B.

Regulation (10 CFR)	Compliance
Appendix E	This Appendix specifies requirements for emergency plans. An emergency plan was prepared for Catawba Nuclear Station in accordance with the provisions of this Appendix.
Appendix F	This Appendix applies to fuel reprocessing plants and related waste management facilities, not to power reactors and is therefore not applicable to this proceeding.
Appendix G	Fracture toughness requirements of this Appendix and program requirements given in Appendix H form the basis for Technical Specification surveillance requirements dealing with the use of surveillance specimens. Additional information to demonstrate compliance can be found in FSAR Section 5.2.4 concerning the irradiation surveillance program. Heatup and cooldown limits consistent with the requirements of this Appendix are established in the Technical Specifications.
Appendix H	Reactor vessel material surveillance program requirements are delineated in this part. Technical Specifications and operating procedures have been established to implement these requirements with a further requirement to update the "heatup" and "cooldown" curves provided in the Technical Specifications. Further information is provided in FSAR Section 5.2.4.
Appendix I	This Appendix provides numerical guides for design objectives and limiting conditions for operation to meet the criteria "as low as is reasonably achievable" for radioactive material in light-water-cooled nuclear power reactor effluents. Further information is provided in FSAR Chapters 11 and 12 and Catawba Nulear Station Technical Specifications.
Appendix J	Reactor containment leakage testing for water cooled power reactors is delineated in this Appendix. These requirements are given in the Technical Specifications. Additional information concerning compliance can be found in FSAR Section 6.2.6 and FSAR Chapter 14.
Appendix K	This Appendix specifies features of acceptable ECCS evaluation models. As noted above for 50.46, the analysis for Catawba Nuclear Station has been conducted using a model which has been accepted by the Commission staff as meeting the requirements of this Appendix.
Appendix L	This Appendix covers information requested by the Attorney General for anti-trust review of license applications. As noted above, the anti-trust review for Catawba Nuclear Station took place at the construction permit stage.
Appendix M	This Appendix covers standarization of design and is not applicable to Catawba Nuclear Station.

Regulation (10 CFR)	Compliance
Appendix N	This Appendix covers standardization of nuclear power plant designs and is not applicable to Catawba Nuclear Station.
Appendix O	This Appendix covers standardization of design and is not applicable to Catawba Nuclear Station.
Appendix P	This Appendix is proposed, 39 Federal Regulation 26293, and it applies to fuel reprocessing plants. Accordingly, it is not applicable to Catawba Nuclear Station.
Appendix Q	This Appendix governs preapplication early review of site suitability issues and is not applicable to Catawba Nuclear Station.
Appendix Q (Proposed)	This Appendix is proposed, 39 Federal Regulation 26297, and it would apply to fuel reprocessing plants, not power reactors.
Appendix R	This Appendix provides the guidelines for the Fire Protection Program. The Fire Protection System is described in Chapter 9 of the FSAR. An evaluation of the Catawba Nuclear Station Fire Protection Program which demonstrates compliance with 10CFR50 Appendix R was included as Appendix D to the Catawba Nuclear Station Response to Appendix A to BTP APCSB 9.5-1, dated August 1981.
100.1	This regulation is explanatory and does not impose independent obligations on licensees.
100.2	This regulation is explanatory. Catawba Nuclear Station is not novel in design and is not unproven as a prototype or pilot plant.
100.3	This regulation is explanatory and does not impose independent obligations on licensees.
100.10	The factors listed related to both the unit design and the site have been provided in the application. Site specifics, including seismology, meteorology, geology, and hydrology, are presented in Chapter 2 of the FSAR. The exclusion area, low population zone, and population center distance are provided and described. The FSAR also describes the characteristics of reactor design and operation.
100.11	An exclusion area has been established, as described in FSAR Section 2.1.2. The low population zone required by 100.11 (a)(2) has been established, as described in FSAR Section 2.1.3.4, as the area within a radial distance of 20,000 feet (6096 meters) from the centerline of the reactors. As indicated in Section 2.1.3.5, the nearest population center, is defined by 10 CFR 100.3(c), based on the 1970 census, is Rock Hill, South Carolina, which is 5.8 miles south-southeast of the site.

Regulation (10 CFR)	Compliance
	The FSAR accident analyses, particularly those in Chapters 6 and 15, demonstrate that offsite doses resulting from postulated accidents would not exceed the criteria in this section of the regulation.
Appendix A	Appendix A to 10 CFR Part 100 provides seismic and geologic siting criteria for nuclear power plants. The compliance of the Catawba Nuclear Station site with this Appendix is discussed in FSAR Section 2.5.