UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

IOWA ELECTRIC LIGHT AND POWER COMPANY
CENTRAL IOWA POWER COOPERATIVE
CORN BELT POWER COOPERATIVE

DOCKET NO. 50-331

DUANE ARNOLD ENERGY CENTER

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 113
License No. DPR-49

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Iowa Electric Light & Power Company, et al, dated August 20, 1984, as revised September 14, 1984, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment and paragraph 2.C.(2) of Facility Operating License No. DPR-49 is hereby amended to read as follows:

(2) Technical Specifications

The Technical Specifications contained in Appendices A and B, as revised through Amendment No. 113, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

Domenic B. Vassallo, Chief
Operating Reactors Branch #2
Division of Licensing

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 12, 1985

ATTACHMENT TO LICENSE AMENDMENT NO. 113

FACILITY OPERATING LICENSE NO. DPR-49

DOCKET NO. 50-331

Revise the Appendix A Technical Specifications by removing the current pages and inserting the revised pages listed below. The revised areas are identified vertical lines.

LIST OF AFFECTED PAGES

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*Figure 3.6-1 was formerly on page 3.6-49.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
H. Shock Suppressors (Snubbers)	H. Shock Suppressors (Snubbers)
1. During all modes of operation, except Cold Shutdown and Refuel, all safety-related snubbers shall be operable, except as noted in 3.6.H.2.	Each safety-related snubber shall be demonstrated OPERABLE by performance of the following inservice inspection program.
2. With one or more snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to OPERABLE status and perform an engineering evaluation per Specification 4.6.H.3 on the supported component or declare the supported system inoperable and follow the appropriate Limiting Conditions For Operation for that system.	1. Visual Inspections The inservice visual inspection of snubbers shall be performed in accordance with the following schedule:

Number of Snubbers Found Inoperable During Inspection or During Inspection Interval	Next Required Visual Inspection Interval
0	18 months ± 25%
1	12 months ± 25%
2	6 months ± 25%
3,4	124 days ± 25%
5,6,7	62 days ± 25%
≥,8	31 days ± 25%

The required inspection interval shall not be lengthened more than one step at a time.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
	Snubbers are categorized in two groups, "accessible and inaccessible," based on their accessibility for inspection during reactor operation. These two groups will be inspected independently according to the above schedule.
	2. Visual Inspection Acceptance Criteria
	Visual inspection shall verify (1) that there are no visible indications of damage or impaired OPERABILITY, (2) (for hydraulic snubbers) inspection of the hydraulic fluid reservoir and fluid connections, (3) attachments to the foundation or supporting structure are secure, and (4) in those locations where snubber movement can be manually induced without disconnecting the snubber, that the snubber has freedom of movement and is not frozen. Snubbers which appear inoperable as a result of visual inspection, may be determined to be OPERABLE for the purpose of establishing the next visual inspection interval, providing that (1) the cause of the rejection is clearly established and remedied for that particular snubber and for other snubbers that may be generically or operationally susceptible; and (2) the affected snubber is functionally tested in the as-found condition and determined to be OPERABLE per specifications 4.6.H.4 or 4.6.H.5, as applicable. However, when the fluid port of a hydraulic snubber is found to be uncovered, the snubber shall be determined to be inoperable and cannot be considered OPERABLE via functional testing for the purpose of establishing the next visual inspection interval.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT

3. Functional Tests

At least once per 18 months a representative sample (10% of the total of safety-related of each type of snubber in use in the plant) shall be functionally tested either in place or in a bench test. For each snubber that does not meet the functional test acceptance criteria of specification 4.6.H.4 or 4.6.H.5, an additional 5% of that type of snubber shall be functionally tested.

The representative sample selected for functional testing shall represent the various configurations, operating environments and range of sizes of snubbers. At least 25% of the snubbers in the representative sample shall include snubbers from the following three categories:

1. The first snubber away from each reactor vessel nozzle

2. Snubbers within 5 feet of heavy equipment (valve, pump, turbine, motor, etc.)

3. Snubbers within 10 feet of the discharge from a safety relief valve

In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENT
	both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included for the re-sampling. If any snubber selected for functional testing either fails to lockup or fails to move, i.e., frozen in place, the cause will be evaluated and, if caused by manufacturer or design deficiency, all snubbers of the same design subject to the same defect shall be functionally tested. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria. For any snubber(s) found inoperable, an engineering evaluation shall be performed on the components which are restrained by the snubber(s). The purpose of this engineering evaluation shall be to determine if the components restrained by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the component remains capable of meeting the designed service requirement.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
	2. Snubber bleed, or release rate is within the specified range in compression or tension. For snubbers specifically required to not displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.
	5. Mechanical Snubbers Functional Test Acceptance Criteria The mechanical snubber functional test shall verify that: 1. The drag force of any snubber in tension and compression is less than the specified maximum drag force. 2. Activation (restraining action) is achieved within the specified range of velocity or acceleration in both tension and compression.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
	3. Snubber release rate, where required, is within the specified range in compression or tension. For snubbers specifically required not to displace under continuous load, the ability of the snubber to withstand load without displacement shall be verified.
	6. Snubber Service Life Monitoring A record of the service life of each snubber, the date at which the designated service life commences and the installation and maintenance records on which the designated service life is based shall be maintained as required by Specification 6.10.2.13. Concurrent with the first inservice visual inspection and at least once per 18 months thereafter, the installation and maintenance records for each snubber shall be reviewed to verify that the indicated service life has not been exceeded and will not be exceeded prior to the next scheduled snubber service life review. If the indicated service life will be exceeded prior to the next scheduled snubber service life review, the snubber service life shall be reevaluated or the snubber shall be replaced or reconditioned so as to extend its service life beyond the date of the next scheduled service life review. This reevaluation, replacement or reconditioning shall be indicated in the records.

The type of inspection planned for each component depends on location, accessibility, and type of expected defect. Direct visual examination is proposed wherever possible since it is fast and reliable. Surface inspections are planned where practical, and where added sensitivity is required. Ultrasonic testing or radiography shall be used where defects can occur in concealed surfaces. Appendix J of the DAEC FSAR provides details of the inspection program for the first 40-month cycle.

3.6.H & 4.6.H BASES:

Shock Suppressors (Snubbers)

Snubbers are designed to prevent unrestrained pipe motion under dynamic loads as might occur during an earthquake or other severe transient, while accommodating normal thermal motion during system startup and shutdown. The consequence of an inoperable snubber is an increase in the probability of damage to piping as a result of a seismic or other event initiating dynamic loads or, in the case of a frozen snubber, exceeding allowable stress limits during system thermal transients. It is therefore required that all snubbers required to protect the primary coolant system or any other safety system or component be operable during reactor operation.

All safety-related snubbers are visually inspected for overall integrity and operability. The inspection will include verification of adequate hydraulic fluid reserve, when applicable, proper attachment of snubber to piping and structures, and an overall assessment of the condition of each snubber.

The inspection frequency is based upon maintaining a constant level of snubber protection. Thus the required inspection interval varies inversely with the number of observed snubber failures, i.e., the number of inoperable snubbers found during a required inspection determines the time interval for the next required inspection. Inspections performed before that interval has elapsed may be used as a new reference for determining the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

When the cause for rejection of a snubber during visual inspection is clearly established and remedied for that snubber, and for any other snubbers that may be generically susceptible, and verified by inservice functional testing, that snubber may be exempted from being counted as inoperable. Generically susceptible snubbers are those which are of a

specific make or model and have the same design features directly related to the cause of rejection of the snubber, or are similarly located or exposed to the same environmental conditions such as humidity, temperature, radiation, and vibration.

To further increase the assurance of snubber reliability, functional tests will be performed once per each 18 months. These tests will include stroking of the snubbers to verify proper movement, restraining characteristics and drag force (if applicable). Ten percent (10%) of the total of each type of snubber represents an adequate sample for such tests. Observed failures on these samples require testing of additional units.

When a snubber is found inoperable, an engineering evaluation is performed to determine the snubber mode of failure and identify any safety-related component or system that may have been adversely affected by the inoperability of the snubber. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.

The service life of a snubber is evaluated via manufacturer input and information through consideration of the snubber service conditions and

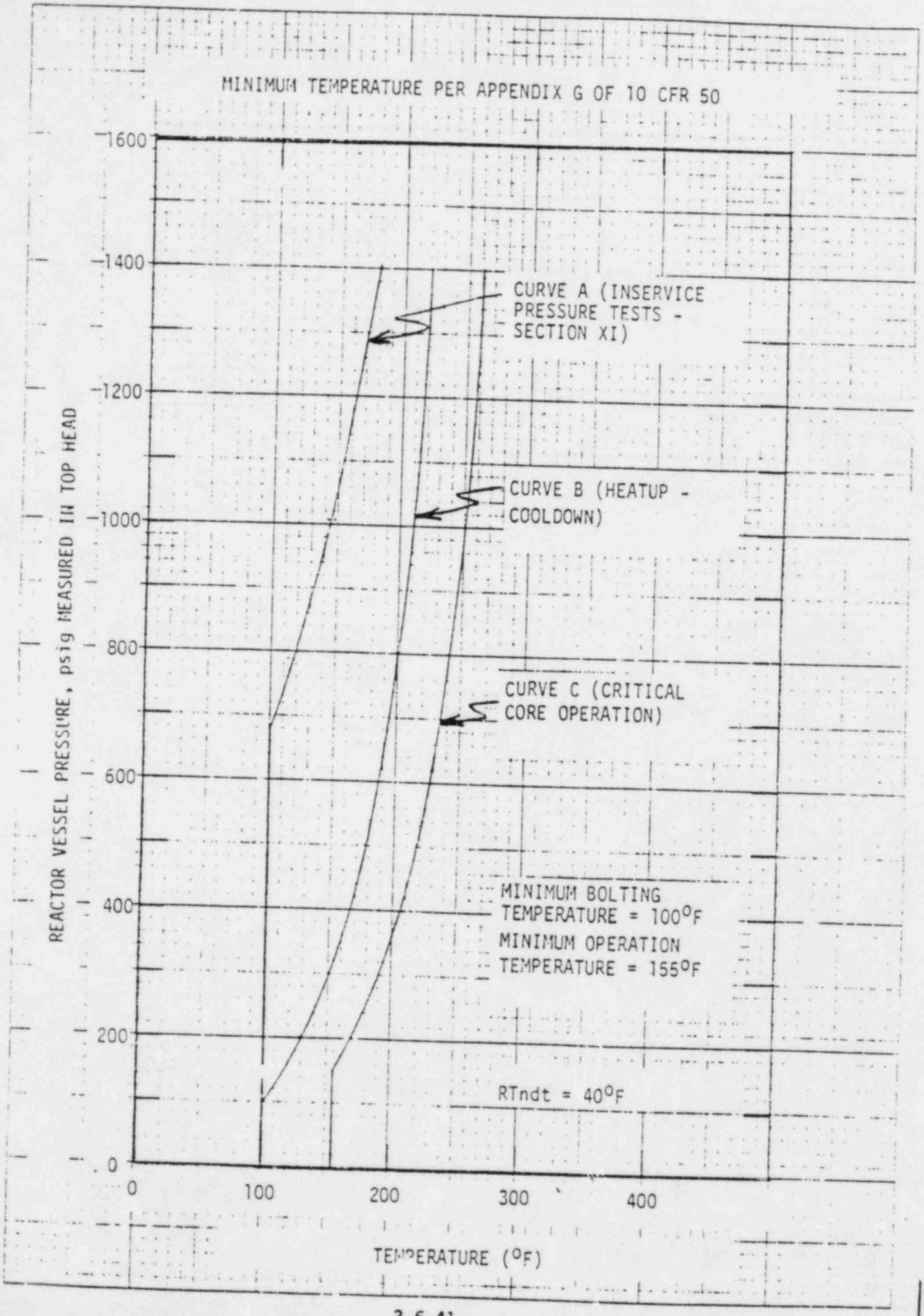
associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc...). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of age and operating conditions. Due to implementation of the snubber service life monitoring program after several years of plant operation, the historical records to date may be incomplete.

The records will be developed from engineering data available. If actual installation data is not available, the service life will be assumed to commence with the initial criticality of the plant. These records will provide statistical bases for future consideration of snubber service life. The requirements for the maintenance of records and the snubber service life review are not intended to affect plant operation.

3.6 and 4.6 References

1) General Electric Company, Low-Low Set Relief Logic System and Lower MSIV Water Level Trip for the Duane Arnold Energy Center, NEDE-30021-P, January, 1983.

FIGURE 3.6-1


MINIMUM TEMPERATURE PER APPENDIX G OF 10 CFR 50
REACTOR VESSEL PRESSURE, psig MEASURED IN TOP HEAD
1600
1400
1200
1000
800
600
400
200
0
0
100
200
300
400
TEMPERATURE (°F)
CURVE A (INSERVICE PRESSURE TESTS - SECTION XI)
CURVE B (HEATUP - COOLDOWN)
CURVE C (CRITICAL CORE OPERATION)
MINIMUM BOLTING TEMPERATURE = 100°F
MINIMUM OPERATION TEMPERATURE = 155°F
RTndt = 40°F

7. Records of training and qualification for current members of the plant staff.

8. Records of in-service inspections performed pursuant to these Technical Specifications.

9. Records of Quality Assurance activities required by the QA Manual.

10. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.

11. Records of meetings of the Operations Committee and the Safety Committee.

12. Records for Environmental Qualification which are covered under the provisions of paragraph 6.13.

13. Records of the service lives of all safety-related hydraulic and mechanical snubbers including the date at which the service life commences and associated installation and maintenance records.