NRC FORM 195 (2-76) U.S. NUCLEAR REGULATORY COMMISSION

DOCKET NUMBER 50-331

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Mr Rusche	Iowa Elec Light & Pwr Cedar Rapids, Ia L Liu	5-17-76
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DESCRIPTION

Ltr notarized 5-17-76.....trans the following:

ENCLOSURE

Amdt to OL/Change to Tech Specs: Consisting of Revisions to Appendix A with regard to limiting conditions for operation.....

(40 cys encl rec'd)

ACKNOWLEDGED

DO NOT REMOVE

PLANT NAME: Duane Arnold

SAFETY — FOR ACTION/INFORMATION — ENVIRO 5-25-76 ehf

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/	PROJECT MANAGER:	Paulson	PROJECT MANAGER :
/	LIC. ASST. :	Parrish	LIC. ASST. :

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	HOUSTON		ROSZTOCZY	/	SCHWENCER		J. COLLINS
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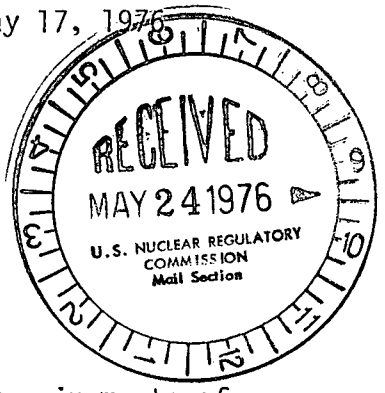
IOWA ELECTRIC LIGHT AND POWER COMPANY

General Office

CEDAR RAPIDS, IOWA

LEE LIU
VICE PRESIDENT – ENGINEERING

May 17, 1976



50-331

Mr. B. C. Rusche, Director
Office of Nuclear Reactor Regulation
Nuclear Regulatory Commission
Washington, D.C. 20545

Dear Mr. Rusche:

Transmitted herewith, in accordance with the requirements of 10CFR50.59 and 50.90, is an application for amendment of DPR-49 to incorporate proposed changes in Technical Specifications (Appendix A to License) for the Duane Arnold Energy Center (DAEC), described in the enclosure hereto.

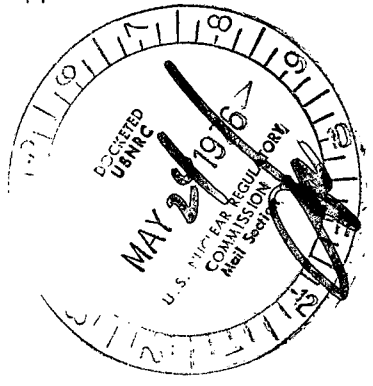
This proposed change has been reviewed and approved by the DAEC Operations Committee and the DAEC Safety Committee and does not involve a significant hazards consideration.

Three signed and notarized originals and 37 additional copies of this application are transmitted herewith. This application, consisting of the foregoing letter and enclosures hereto, is true and accurate to the best of my knowledge and belief.

Iowa Electric Light and Power Company

By _____
Lee Liu
Vice President, Engineering

LL:D
cc: D. Arnold
J. Newman
J. Shea
J. Keppler



Sworn and subscribed to before me on this 17th day of May, 1976.

Wendy C. Rodenhizer
Notary Public in and for the State of Iowa.

Wendy Rodenhizer
NOTARY PUBLIC
STATE OF IOWA
Commission Expires
September 30, 1976

5199

PROPOSED CHANGE RTS-49B TO DAEC TECHNICAL SPECIFICATIONS

I. Affected Technical Specifications

Appendix A of the Technical Specifications for the DAEC (DPR-49).

II. Proposed Change in Technical Specifications

The licensees of DPR-49 propose the following changes in the Technical Specifications set forth in I above:

Add the attached specifications 3.6.H and 4.6.H consisting of Limiting Condition for Operation, Surveillance Requirements and Bases for hydraulic snubbers.

III. Justification for Proposed Change

The attached specifications are being submitted at the request of the NRC (Letter; Mr. G. Lear, Chief, Operating Reactors Branch #3, Division of Reactor Licensing, United Stated Nuclear Regulatory Commission to Mr. D. Arnold, President, Iowa Electric Light and Power Company; dated December 24, 1975.

The categories of shock suppressors described in Tables 4.6-3 and 4.6-4 were tabulated by their accessibility for inspection. Table 4.6-3 describes those considered to be accessible during normal operation and Table 4.6-4 describes those considered to be inaccessible during normal operation because of their location in high radiation areas.

IV. Review Procedures

This proposed change has been reviewed by the DAEC Operations Committee and Safety Committee which have found that this proposed change does not involve a significant hazards consideration.

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
	7. At the end of each 10-year inspection interval, a report shall be submitted to the NRC that defines which of the following examination categories, if any, could not be completed: a. Class 1 components - Categories N, L-2, and M-2. b. Class 2 components - Category C-H.
H. Hydraulic Snubbers 1. During all modes of operation, except Cold Shutdown and Refuel, all hydraulic snubbers listed in Tables 4.6-3 and 4.6-4 shall be operable, except as noted in 3.6.H.2 through 3.6.H.4 below. 2. From and after the time that a hydraulic snubber is determined to be inoperable, continued reactor operability is permissible only during the succeeding 72 hours unless the snubber is sooner made operable. 3. If the requirements of 3.6.H.1 and 3.6.H.2 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 36 hours. 4. If a hydraulic snubber is determined to be inoperable while the reactor is in the shutdown or refuel mode, the snubber shall be made operable prior to reactor startup.	H. Hydraulic Snubbers The following surveillance requirements apply to all hydraulic snubbers listed in Tables 4.6-3 and 4.6-4: 1. All hydraulic snubbers whose seal material has been demonstrated by operating experience, lab testing or analysis to be compatible with the operating environment shall be visually inspected. This inspection shall include, but not necessarily be limited to, inspection of the hydraulic fluid reservoir, fluid connections and linkage connections to the piping and anchor to verify snubber operability in accordance with the following schedule: Number of Snubbers Found Inoperable During Inspection or During Inspection Interval / Next Required 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%

LIMITING CONDITIONS FOR OPERATION	SURVEILLANCE REQUIREMENTS
5. Snubbers may be added to safety related systems without prior License Amendment to Tables 4.6-3 or 4.6-4 provided that safety evaluations, documentation and reporting are provided in accordance with 10 CFR 50.59 and that a revision to Tables 4.6-3 or 4.6-4 is included with a subsequent License Amendment request.	The required inspection interval shall not be lengthened more than one step at a time. 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. All hydraulic snubbers whose seal materials are other than ethylene propylene or other material that has been demonstrated to be compatible with the operating environment shall be visually inspected for operability every 31 days. 3. The initial inspection shall be performed within six months ± 25% from the date of issuance of these specifications. For the purpose of entering the schedule in Specification 4.6.H.1, it shall be assumed that the facility has been on a 6-month inspection interval. 4. Once each refueling cycle a representative sample of 10 snubbers or approximately 10% of the snubbers, whichever is less, shall be functionally tested for operability including verification of proper piston movement, lock-up and bleed. For each unit and subsequent unit found inoperable, an additional 10% or ten (10) snubbers shall be so tested until no more failures are found or all units per category tested have been tested.

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 further detail as to the inspection program planned for the DAEC.

3.6.H & 4.6.H BASES:

Hydraulic Snubbers

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

Because the snubber protection is required only during relatively low probability events, a period of 72 hours is allowed for repairs or replacements. In case a shutdown is required, the allowance of 36 hours to reach a cold shutdown condition will permit an orderly shutdown consistent with standard operating procedures. Since plant startup should not commence with knowingly

defective safety related equipment, Specification 3.6.H.4 prohibits startup with inoperable snubbers.

All safety related hydraulic snubbers are visually inspected for overall integrity and operability. The inspection will include verification of proper orientation, adequate hydraulic fluid level and proper attachment of snubber to piping and structures.

The inspection frequency is based upon maintaining a constant level of snubber protection. Thus the required inspection interval varies inversely with the observed snubber failures. 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 point to determine 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.

Experience at operating facilities has shown that the required surveillance program should assure an acceptable level of snubber performance provided that the seal materials are compatible with the operating environment.

Snubbers containing seal material which has not been demonstrated by operating experience, lab tests or analysis to be compatible with the operating environment should be inspected more frequently (every month) until material compatibility is confirmed or an appropriate changeout is completed.

Examination of defective snubbers at reactor facilities and material tests performed at several laboratories (Reference 1) has shown that millable gum polyurethane deteriorates rapidly under the temperature and moisture conditions present in many snubber locations. Although molded polyurethane exhibits greater resistance to these conditions, it also may be unsuitable for application in the higher temperature environments. Data are not currently available to precisely define an upper temperature limit for the molded polyurethane. Lab tests and in-plant experience indicate that seal materials are available, primarily ethylene propylene compounds, which should give satisfactory performance under the most severe conditions expected in reactor installations.

To further increase the assurance of snubber reliability, functional tests will be performed once each refueling cycle. These tests will include stroking of the snubbers to verify proper piston movement, lock-up and bleed. Ten (10) snubbers represent an adequate sample for such tests. Observed failures on these samples should require testing of additional units. Snubbers in high radiation areas or those especially difficult to remove need not be selected for functional tests provided operability was previously verified.

Ref. 1 - Report H. R. Erickson, Bergen Paterson, to K. R. Goller, NRC, October 7, 1974. Subject: Hydraulic Shock Sway Arrestors.

TABLE 4.6-3

HYDRAULIC SNUBBERS ACCESSIBLE DURING NORMAL OPERATION

Identification No.	System	Bldg. Location	Vendor Dwg. No.
GBC-1-SS-56	RHR Service Water	Reactor	6156
GBC-1-SS-57	RHR Service Water	Reactor	6157
GBC-2-SS-62	RHR Service Water	Reactor	6162
HCC-8-SS-11	Core Spray Pump Suction	Reactor	1787
HCC-8-SS-12	Core Spray Pump Suction	Reactor	1788/1
DCA-14-SS-73	RWCU Return to FW Line	Reactor	8518/1
EBB-16-SS-231	RHR	Reactor	2084
EBB-16-SS-232(2 ea.)	RHR	Reactor	2085
EBB-16-SS-233	RHR	Reactor	2086
EBB-16-SS-234(2 ea.)	RHR	Reactor	2087
GBB-3-SS-235	RHR	Reactor	2088
GBB-3-SS-236	RHR	Reactor	2089
GBB-3-SS-237	RHR	Reactor	2090
GBB-3-SS-238	RHR	Reactor	2091
GLE-8-SS-239	RHR	Reactor	2092
GLE-8-SS-240	RHR	Reactor	2093
GBB-10-SS-241	RHR	Reactor	2094
GBB-10-SS-242(2 ea.)	RHR	Reactor	2095
GBB-10-SS-243	RHR	Reactor	2096
GBB-4-SS-210	RHR	Reactor	2063
GBB-4-SS-211	RHR	Reactor	2064
GBB-4-SS-212	RHR	Reactor	2065
GBB-4-SS-213	RHR	Reactor	2066
GBB-16-SS-214	RHR	Reactor	2067
GBB-5-SS-215	RHR	Reactor	2068
GBB-4-SS-216 (2 ea.)	RHR	Reactor	2069
GBB-4-SS-217 (2 ea.)	RHR	Reactor	2070
HBB-21-SS-218(2 ea.)	RHR	Reactor	2071
HBB-23-SS-219	RHR	Reactor	2072
HBB-23-SS-220	RHR	Reactor	2073
HBB-24-SS-221	RHR	Reactor	2074
HBB-24-SS-222	RHR	Reactor	2075
GBB-7-SS-223	RHR	Reactor	2076
GBB-7-SS-224	RHR	Reactor	2077
GBB-6-SS-225	RHR	Reactor	2078
GBB-6-SS-226	RHR	Reactor	2079
HBB-24-SS-227(2 ea.)	RHR	Reactor	2080
HBB-24-SS-228(2 ea.)	RHR	Reactor	2081
HBB-24-SS-229	RHR	Reactor	2082
HBB-29-SS-199	RHR	Reactor	2052
HBB-30-SS-205	RHR	Reactor	2058
HBB-30-SS-206	RHR	Reactor	2059
HBB-30-SS-245	RHR	Reactor	2098

(2 ea.) - Indicates there are 2 snubbers with that number.

DAEC-1
TABLE 4.6-3 (cont.)

Identification No.	System	Bldg. Location	Vendor Dwg. No.
HBB-7-SS-17	RCIC Turbine Exhaust	Reactor	1677
HBB-7-SS-18	RCIC Turbine Exhaust	Reactor	1678
HBB-7-SS-19 (2 ea.)	RCIC Turbine Exhaust	Reactor	1680
GBB-13-SS-16	Core Spray	Reactor	1792
GBB-14-SS-20	Core Spray	Reactor	1796
HBB-2-SS-7	Core Spray	Reactor	1783
HBB-2-SS-8	Core Spray	Reactor	1784
HBB-1-SS-9	Core Spray	Reactor	1785
HBB-1-SS-10	Core Spray	Reactor	1786
EBB-14-SS-13	HPCI Steam Supply	Reactor	1579
EBB-14-SS-14	HPCI Steam Supply	Reactor	1580
EBB-14-SS-15	HPCI Steam Supply	Reactor	1581
EBB-14-SS-16	HPCI Steam Supply	Reactor	1582
EBB-14-SS-16A	HPCI Steam Supply	Reactor	1582A
HBB-6-SS-20	HPCI Turbine Exhaust	Reactor	1586
HBB-6-SS-22	HPCI Turbine Exhaust	Reactor	1588
HBD-31-SS-71	Emergency Service Water	Reactor	6171
HBD-31-SS-101	Emergency Service Water	Reactor	6201
HBB-25-SS-178	Fuel Pool to RHR	Reactor	2031
GBD-29-SS-12	Aux. Boiler Stm. to HPCI	Reactor	1578/1
DCB-2-SS-78	RWCU	Reactor	8523

(2 ea.) - Indicates there are 2 snubbers with that number.

TABLE 4.6-4

HYDRAULIC SNUBBERS INACCESSIBLE DURING NORMAL OPERATION

Identification No.	System	Location	Vendor Dwg. No.
DLA-5-SS-10	RHR	Drywell	6010A/1
DLA-5-SS-11	RHR	Drywell	6011
DLA-6-SS-12	RHR	Drywell	6012
DLA-6-SS-13	RHR	Drywell	6013
DLA-4-SS-14	RHR	Drywell	6014
DLA-4-SS-15	RHR	Drywell	6015
DBA-4-SS-35	RCIC	Drywell	6035
DBA-4-SS-36	RCIC	Drywell	6036
DLA-3-SS-1	HPCI Steam Supply	Drywell	6001
DLA-3-SS-2	HPCI Steam Supply	Drywell	6002
DLA-3-SS-3	HPCI Steam Supply	Drywell	6003
DBA-6-SS-29	CRD	Drywell	6029
DBA-6-SS-30	CRD	Drywell	6030
DCA-6-SS-48	RWCU	Drywell	6048
DCA-6-SS-49	RWCU	Drywell	6049
DCA-6-SS-50	RWCU	Drywell	6050
DBA-4-SS-34	RCIC Steam Supply	Drywell	6034
DBA-5-SS-31	Head Spray	Drywell	6031
DBA-5-SS-37	Head Spray	Drywell	6037
DBA-5-SS-38	Head Spray	Drywell	6038
DBA-5-SS-47	Head Spray	Drywell	6047
DLA-2-SS-4	RHR	Drywell	6004
DLA-2-SS-5	RHR	Drywell	6005
DLA-2-SS-6	RHR	Drywell	6006
DLA-2-SS-7	RHR	Drywell	6007
DLA-2-SS-8	RHR	Drywell	6008
DLA-2-SS-9	RHR	Drywell	6009
DBA-7-SS-71	RCIC to FW Line	Reactor	8516
DCA-14-SS-72	RWCU to FW Line	Reactor	8517
GBC-6-SS-16	Main Stm. Relief Valve Discharge	Drywell	6016
GBC-6-SS-17	" " "	Drywell	6017
GBC-7-SS-18	" " "	Drywell	6018
GBC-7-SS-19	" " "	Drywell	6019
GBC-8-SS-20	" " "	Drywell	6020
GBC-8-SS-21	" " "	Drywell	6021
GBC-8-SS-44	" " "	Drywell	6044
GBC-8-SS-45	" " "	Drywell	6045
GBC-8-SS-46	" " "	Drywell	6046
GBC-9-SS-22	" " "	Drywell	6022
GBC-9-SS-23	" " "	Drywell	6023
GBC-9-SS-41	" " "	Drywell	6041
GBC-9-SS-42 (2 ea.)	" " "	Drywell	6042

(2 ea.) - Indicates there are 2 snubbers with that number.

DAEC-1
TABLE 4.6-4 (cont.)

Identification No.	System	Location	Vendor Dwg. No.
GBC-9-SS-43	Main Stm. Relief Valve Discharge	Drywell	6043
GBC-10-SS-24	" " "	Drywell	6024
GBC-10-SS-25	" " "	Drywell	6025
GBC-10-SS-39	" " "	Drywell	6039
GBC-10-SS-40 (2 ea.)	" " "	Drywell	6040
GBC-11-SS-26	" " "	Drywell	6026
GBC-11-SS-27	" " "	Drywell	6027
GBC-11-SS-32	" " "	Drywell	6032
GBC-11-SS-33	" " "	Drywell	6033
SSB-1-MS	Main Steam	Drywell	GE-BP 405 Rev 2
SSB-2-MS	Main Steam	Drywell	GE-BP 406 Rev 3
SSC-1-MS	Main Steam	Drywell	GE-BP 407 Rev 2
SSC-2-MS	Main Steam	Drywell	GE-BP 408 Rev 2
SSA-1-MS	Main Steam	Drywell	GE-BP 401 Rev 1
SSA-2-MS	Main Steam	Drywell	GE-BP 402 Rev 1
SSD-1-MS	Main Steam	Drywell	GE-BP 403 Rev 1
SSD-2-MS	Main Steam	Drywell	GE-BP 404 Rev 1
SSA-1	Recirc	Drywell	GE-BP 201 Rev 2
SSB-1	Recirc	Drywell	GE-BP 202 Rev 2
SSA-2	Recirc	Drywell	GE-BP 203 Rev 1
SSB-2	Recirc	Drywell	GE-BP 204 Rev 1
SSA-3	Recirc	Drywell	GE-BP 205 Rev 1
SSB-3	Recirc	Drywell	GE-BP 206 Rev 1
SSA-4	Recirc	Drywell	GE-BP 207 Rev 1
SSB-4	Recirc	Drywell	GE-BP 208 Rev 1
SSA-5	Recirc	Drywell	GE-BP 209 Rev 1
SSB-5	Recirc	Drywell	GE-BP 210 Rev 1
SSA-6	Recirc	Drywell	GE-BP 211 Rev 1
SSB-6	Recirc	Drywell	GE-BP 212 Rev 1
SSA-7	Recirc	Drywell	GE-BP 213 Rev 1
SSB-7	Recirc	Drywell	GE-BP 214 Rev 1
SSA-8	Recirc	Drywell	GE-BP 215 Rev 1
SSB-8	Recirc	Drywell	GE-BP 216 Rev 1
SSA-9	Recirc	Drywell	GE-BP 217 Rev 1
SSB-9	Recirc	Drywell	GE-BP 218 Rev 1
SSA-10	Recirc	Drywell	GE-BP 219 Rev 1
SSB-10	Recirc	Drywell	GE-BP 220 Rev 1
SSA-11	Recirc	Drywell	GE-BP 221 Rev 1
SSB-11	Recirc	Drywell	GE-BP 222 Rev 1

(2 ea.) - Indicates there are 2 snubbers with that number.