

Iowa Electric Light and Power Company

JOHN F. FRANZ, JR.  
VICE PRESIDENT, NUCLEAR

January 29, 1993  
NG-93-0222

Dr. Thomas E. Murley, Director  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-137  
Washington, DC 20555

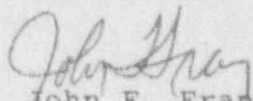
Subject: Duane Arnold Energy Center  
Docket No: 50-331  
Op. License No: DPR-49  
DAEC IST Relief Requests VR-003, VR-004,  
VR-005  
Reference: Letter from D. Mineck (Iowa Electric) to  
Dr. T. Murley (NRC) dated October 15,  
1990 (NG-90-2454)  
File: A-101b, A-286e

Dear Dr. Murley:

Iowa Electric Light and Power Company previously submitted revisions to Duane Arnold Energy Center (DAEC) Inservice Testing (IST) Relief Requests VR-003 and VR-005 (Reference). That submittal also withdrew Relief Request VR-004. We have since identified the need to resubmit request VR-004 and to modify requests VR-003 and VR-005. These changes are discussed in Attachment 1. The relief requests are contained in Attachment 2. We request approval of these requests prior to the next refuel outage currently scheduled to begin July 29, 1993.

Should you have any questions regarding this matter, please contact this office.

Very truly yours,



John F. Franz  
Vice President, Nuclear

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Attachments: 1) Description of Changes  
2) Relief Requests VR-003, VR-004 and VR-005

cc: C. Rushworth  
L. Liu  
L. Root  
R. Pulsifer (NRC-NRR)  
A. Bert Davis (Region III)  
NRC Resident Office  
DCRC

### Description of Changes

#### Relief Request VR-003

Relief Request VR-003 has been revised to implement flow testing on a refueling outage basis rather than exercising with a mechanical exerciser. This change will provide a more reliable assurance of check valve operability since actual system flow is used to exercise the valve disk.

#### Relief Request VR-004

Relief Request VR-004 is being resubmitted due to modifications made to feedwater check valves V-14-0001 and V-14-0003. The actuating mechanisms and position indication lights were removed from these valves during the last refueling outage in order to improve the valves' seating capability, and therefore, leak tightness. Because the position indication lights have been removed, it is no longer possible to perform the "exercise close test" during Cold Shutdown.

#### Relief Request VR-005

Relief Request VR-005 has been revised to include the Main Steam Safety Valves PSV-4400 through PSV-4407. Additionally, a statement has been added to the description of alternate testing to state Iowa Electric's position on setpoint restoration during testing.

RELIEF REQUEST NO. VR-003

SYSTEM:

Residual Heat Removal

COMPONENTS:

V-19-0149  
V-20-0082

CATEGORY:

A/C

FUNCTION:

These valves open to provide a pathway for LPCI flow into the recirculation system and close to isolate the RHR system from the high pressure of the recirculation system.

TEST REQUIREMENT:

Check valves shall be exercised at least every 3 months. (IWV-3521)

BASIS FOR RELIEF:

These valves cannot be stroked during power operation because the RHR pumps cannot develop sufficient head to overcome recirculation system pressure. These valves cannot be manually stroked during operation because they are located in the drywell and are inaccessible.

In-situ testing has determined that these check valves fully open at approximately 4000 gpm. To ensure compliance with IWV-3522, positive verification of valve operation is required. To achieve this verification, a mechanical indicator is attached to the rotating shaft. This testing cannot be conducted at Cold Shutdown because the containment is inerted with nitrogen. In order to gain personnel access to the drywell, the nitrogen must be vented (normally a 16 - 24 hour operation). The containment must be re-inerted before the plant is restarted (another 16 - 24 hour operation). Inerting and de-inerting the drywell solely for the purpose of valve testing is excessively burdensome. Additionally, a full stroke test of these valves cannot be performed with flow at Cold Shutdown because it would be necessary to test two channels/loops of a safety system at the same time. Current guidance only allows the operation of one train of a safety system for surveillance purposes.

RELIEF REQUEST NO. VR-002 (Continued)

One of these valves is partially stroked during Cold Shutdown for the operation of the shutdown cooling mode of RHR. This is only a partial stroke test as the normal flow rate in this mode is only 4000 gpm versus a maximum required accident flow rate of 14,400 gpm and no positive verification of valve position is made. While shifting system operation to the idle loop is possible, it is a time consuming operation. In order to change loops and inject cooling flow through the other loop, more than 8 hours of preparation and lineup work would be required of the control room personnel, assuming no other testing/duties ongoing at the time.

ALTERNATE TESTING:

One of these valves will be partially stroked to the open position each cold shutdown.

V-19-0149 and V-20-0082 will be stroked to the full open position during each refueling outage, utilizing a mechanical position indicator to prove positive valve operation.



RELIEF REQUEST NO. VR-004

SYSTEM:

Nuclear Boiler

COMPONENTS:

V-14-0001 and V-14-0003

CATEGORY:

A/C

FUNCTION:

These valves are the reactor feedwater supply inboard isolation valves. They open for feedwater flow, RCIC and HPCI injection into the vessel and act as containment isolation valves.

TEST REQUIREMENT:

Check valves shall be exercised at least every 3 months.  
(IWV-3521)

BASIS FOR RELIEF:

The valves cannot be exercised during power operation. During plant operation at power, reactor feedwater is supplied through both valves to maintain reactor coolant inventory in the reactor vessel and maintain reactor vessel water level. Closing either of these valves will isolate two of the four supplies of feedwater into the reactor vessel. This action could result in thermal shock to the reactor vessel feedwater nozzles and spargers upon resumption of flow and a plant trip due to the potential severe reactor vessel water level transients.

These valves cannot normally be tested during Cold Shutdown because the containment is inerted with nitrogen. Personnel would be required to access the drywell to perform a mechanical exercise of these valves. The nitrogen must be vented (normally a 16-24 hour operation). The containment must be re-inerted before the plant is restarted (another 16-24 hour operation). Inerting and de-inerting the drywell solely for the purpose of testing is excessively burdensome. In addition, the LLRT is done with air, therefore, the line between the check valves and upstream isolation valve must be drained. This is a time consuming process resulting in lengthened shutdown times and unnecessary hours of exposure.

RELIEF REQUEST NO. VR-004 (CONTINUED)

ALTERNATE TESTING:

The valves will be assumed to be in the open position if the feedwater system operates properly during normal plant operation. The valves will be exercised to the fully closed position each refueling outage and verified by local leak rate testing. In addition, during each refueling outage, one of these valves will be disassembled and inspected for full stroke operability in accordance with requirements of USNRC Generic Letter 89-04. Thus, both valves will be disassembled and inspected once every two refueling outages. The normal operation of the feedwater system and plant will fulfill the partial flow test of these valves.

RELIEF REQUEST NO. VR-005

SYSTEM:

Various

COMPONENTS:

PSV-1911	PSV-2122	PSV-2609	PSV-4439B	PSV-4403
PSV-1952	PSV-2129	PSV-3221A	PSV-4439C	PSV-4404
PSV-1975	PSV-2223	PSV-3221B	PSV-4439D	PSV-4405
PSV-1988	PSV-2228	PSV-3222A	PSV-4439E	PSV-4406
PSV-2043	PSV-2301	PSV-3222B	PSV-4439F	PSV-4407
PSV-2057	PSV-2430	PSV-3223A	PSV-4842	
PSV-2068	PSV-2474	PSV-3223B	PSV-4400	
PSV-2102	PSV-2501	PSV-4336	PSV-4401	
PSV-2109	PSV-2607	PSV-4439A	PSV-4402	

CATEGORY:

C

FUNCTION:

These valves provide overpressure protection to the associated system components.

TEST REQUIREMENT:

Safety and relief valves shall be tested in accordance with Subsection IWV-3510.

BASIS FOR RELIEF:

ANSI/ASME OM-1-1981, "Requirements for Inservice Performance Testing of Nuclear Power Plant Pressure Relief Devices", was developed to supersede the requirements of Subsection IWV-3510. This standard is more definitive and better suited to operational testing than is ASME/PTC 25.3-1976 which is referenced in IWV-3512.

ALTERNATE TESTING:

Safety and relief valves will be tested in accordance with the requirements of ANSI/ASME OM-1-1981. During testing, the setpoint will be restored to within the specified tolerance of the original Installation/Construction/Manufacture Code before the safety/relief valve is reinstalled.