



Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

November 18, 1982

Mr. James G. Keppler, Director
Directorate of Inspection and
Enforcement - Region III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

Subject: LaSalle County Station, Units 1 and 2
10 CFR 50.55(e) 82-10, Final Report
Overtorqued Bolts on ECCS Pumps
NRC Docket Nos. 50-373 and 50-374

Dear Mr. Keppler:

Commonwealth Edison notified your office on October 19, 1982 of a potential reportable deficiency in accordance with 10CFR50.55(e) concerning the torque values on the ECCS pump foundation anchor bolts. This letter is provided to meet the 30 day reporting requirement for that deficiency.

Initial review of low torque values discovered during inspection resulted in the realization that the pump manufacturer lowered the torque requirement range from 2900-3000 ft.-lb. to 400-500 ft.-lb. in a 1981 instruction manual revision which occurred after the installation of the ECCS pumps for LaSalle Units 1 and 2. Torque checks at the site indicated that the present torque values are in the range of 2000-2500 ft.-lb.

The pumps in question were supplied under the NSSS contract and therefore General Electric Co. was requested to investigate why the GE review process for vendor manuals did not flag this torque requirement change. General Electric has indicated that this item was reviewed at the time of the instruction manual change and that calculations at that time, determined that the old torque values of 2900-3000 ft.-lb. would not take the bolts past their yield point and therefore concluded that the site need not retorque the anchor bolts to the new, lower limit.

Concurrent with our notification to Region III in October, Commonwealth Edison requested that Sargent & Lundy evaluate the concern and prepare a report which would determine the present status of these ECCS pump anchor bolts (copy attached). Initial review indicated that the present pre-load torque is adequate for all seismic and hydrodynamic loads.

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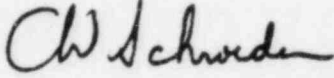
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November 18, 1982

The Sargent & Lundy analysis has provided the site with objective criteria for the evaluation of each specific bolt. Commencing on November 19, 1982, the site will torque check each bolt to determine if the present torque is within the specified torque range (Attachment A). It is anticipated that both Unit 1 and Unit 2 rechecks will be completed by December 6, 1982. During these torque checks, the torque values measured will be compared to the Attachment A table values ($\pm 10\%$ column) and left "as-found" if they fall within the specified minimum-maximum range. If testing indicates that the "as-found" value exceeds the maximum 2025 ft.-lb. torque limit, then the bolt will be relaxed, cleaned and retorqued to a value not to exceed the 2025 ft.-lb. limit.

If there are any questions concerning this activity please contact this office.

Very truly yours,

 11/18/82

C. W. Schroeder
Nuclear Licensing Administrator

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Attachment

cc: NRC Resident Inspector - LSCS
Director of Inspection and
Enforcement - Washington, D.C.

5457N

T. E. Watts

SARGENT & LUNDY
ENGINEERS
55 EAST MONROE STREET
CHICAGO, ILLINOIS 60603
TELEPHONE 312-269-2000

November 10, 1982
Project Nos. 4266/67-00

Commonwealth Edison Company
LaSalle County Station - Units 1 & 2

Foundation Bolts
ECCS Pumps

Mr. B. R. Shelton
Station Nuclear Engineering Dept.
Commonwealth Edison Company
P. O. Box 767 - 35 FN West
Chicago, IL 60690

Dear Mr. Shelton:

As requested by you, we have prepared the preload torque requirements for foundation bolts of NMR, HPCS and LPCS pumps. Attachment "A" lists the torque values and Attachment "B" provides the design basis for torque values listed in Attachment "A".

We recommend that all the pump bolts be torqued between the Maximum Torque Limit and the Target Torque Lower Limit as listed in Attachment "A". The existing preload torque of the bolts are acceptable if they fall between the Minimum Torque Limit and the Maximum Torque Limit shown in Attachment "A". If any of the bolts are found to have a preloading torque outside the Target Torque lower limit and maximum limits, they should be retorqued to a value within this range. The seismic only torque values are listed for comparison only.

Yours very truly,

B. L. Pandit
B. L. Pandit
Mechanical Project Engineer

- BLP:am
- In duplicate
- Attachments
- Copies:
- T. E. Watts (1/1)
- G. J. Diederich (1/1)
- D. L. Shamblin (1/1)
- R. J. Mazza (1/1)
- D. C. Haan (1/1)
- R. H. Pollock (1/1)
- V. Reklaitis (1/1)
- Y. A. Patel (1/1)

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PRELOADING TORQUE, ft-lb
BOLT DIA: 1-7/8"
MATERIAL: A-36

	HPCS PUMP		RHR PUMP		LPCS PUMP	
	Torque Wrench Accuracy		Torque Wrench Accuracy		Torque Wrench Accuracy	
	0%	± 10%	0%	± 10%	0%	± 10%
Maximum Torque Limit (ft-lb)	2250	2025	2250	2025	2250	2025
Target Torque Lower Limit (ft-lb)	977	1086	1293	1437	1063	1182
Minimum Torque Limit	642	714	792	880	512	569
Seismic Only Torque (ft-lb)	257	286	472	525	219	244

Notes

1. The maximum torque limit will induce a maximum preload stress in the bolt equal to 90% of the yield stress.
2. The target torque lower limit will provide tensile force in each bolt at least equal to the tensile force caused by maximum design load.
3. The minimum torque limit will develop sufficient friction force at least equal to the shear force of the maximum design load.
4. "Seismic only torque" will induce a preload stress in the bolt equal to the design seismic load.

Summary of Stresses and Deflections in the Foundation Bolts for
LPCS, RHR and HPCS Pumps

Bolt Size = 1-7/8"

Stress Area = 2.21 in²

Material A36 Steel

Pump Type	Maximum Stress Component in the bolts (lbs/in ²)				Maximum deflection of the bolts (in)		Estimated duration of the peak load (sec)
	Seismic		Seismic+Hydro-dynamic		Seismic	Seismic+Hydro-dynamic	
	Tensile	Shear	Tensile	Shear			
LPCS	3589	1349	12313	5931	.419x10 ⁻³	1.44x10 ⁻³	.03
RHR	6291	3853	14978	9174	.734x10 ⁻³	1.75x10 ⁻³	.021
HPCS	2975	1956	11317	7437	.347x10 ⁻³	1.32x10 ⁻³	.008

