Commonwealth Edison
Zion Generating Station
101 Shiloh Blvd.
Zion, Illinois 60099
Telephone 708 / 746-2084

October 3, 1994

U. S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

Dear Sir:

The enclosed Licensee Event Report number 94-007-00. Docket No. 50-304/DPR-48 from Zion Generating Station is being transmitted to you in accordance with the requirements of 10CFR50.73(a)(?)(i)(B), which requires a 30 day written report when any operation or condition occurs that is prohibited by the plant's Technical Specifications.

Very truly yours,

DB Wozniak for

E. A. Broccolo
Station Manager
Zion Generating Station

EAB/neb

Enclosure: Licensee Event Report

cc: NRC Region III Administrator
NRC Resident Inspector
INPO Record Center
CECo distribution List

ZLER/394010.1er(6)

070020

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LICENSEE EVENT REPORT (LER)

Form Rev 3.0

Facility Name (1)	Docket Number (2)	Page (3)
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Title (4)

Exceeding Technical Specification 3.15.2.C for the 2A Diesel Generator Because the Allowed Interval for IST testing was Exceeded.

Event Date (5)			LER Number (6)				Report Date (7)			Other Facilities Involved (8)	
Month	Day	Year	Year	/// /// ///	Sequential Number	/// /// ///	Revision Number	Month	Day	Year	Facility Names	Docket Number(s)
0 9	0 2	9 4	9 4	---	0 0 7	---	0 0	1 0	0 3	9 4	N/A	

OPERATING MODE (9)	1	THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10CFR (Check one or more of the following) (11)			
POWER LEVEL (10)	0 9 9	___ 20.402(b)	___ 20.405(c)	___ 50.73(a)(2)(iv)	___ 73.71(b)
		___ 20.405(a)(1)(i)	___ 50.36(c)(1)	___ 50.73(a)(2)(v)	___ 73.71(c)
		___ 20.405(a)(1)(ii)	___ 50.36(c)(2)	___ 50.73(a)(2)(vii)	___ Other (Specify
		___ 20.405(a)(1)(iii)	X 50.73(a)(2)(i)	___ 50.73(a)(2)(viii)(A)	in Abstract
		___ 20.405(a)(1)(iv)	___ 50.73(a)(2)(ii)	___ 50.73(a)(2)(viii)(B)	below and in
		___ 20.405(a)(1)(v)	___ 50.73(a)(2)(iii)	___ 50.73(a)(2)(x)	Text)

LICENSEE CONTACT FOR THIS LER (12)

Name	TELEPHONE NUMBER
	AREA CODE
Stewart J. Yuen, System Engineering ext. 2311	7 0 8 7 4 6 - 2 0 8 4

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS	CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NPRDS
E				N					

SUPPLEMENTAL REPORT EXPECTED (14)		Expected Submission Date (15)	Month	Day	Year
___ YES (If yes, complete EXPECTED SUBMISSION DATE)	X NO				

ABSTRACT (Limit to 1400 spaces, i.e. approximately fifteen single-space typewritten lines) (16)

On September 2, 1994, during the In-Service Testing (IST) review of Periodic Test (PT) 11B-2A, "2A Emergency Diesel Generator (EDG) [EK] Fuel Oil Transfer Oil Pump Performance Test", the IST engineer discovered that vibration readings taken on the 2A EDG east and west fuel oil transfer pumps were low relative to the previous quarterly test. The Vibration Coordinator performed a spectral analysis and determined that the readings were inconclusive. Since the critical date for performing the surveillance was August 25, 1994, the 2A diesel fuel oil transfer pumps were declared inoperable for exceeding the critical test due date. The 2A EDG was declared inoperable due to its support equipment being inoperable.

The cause of this event was management deficiency. The vibration data is not required to be verified by the Vibration Coordinator before the PT is declared acceptable.

Corrective actions include retaking vibration readings on the 2A EDG fuel oil transfer pumps, verifying their acceptability, reviewing assignment of data acquisition, and revising the vibration program administrative procedure to require Vibration Coordinator review.

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (6)				Page (3)
		Year /// /// ///	Sequential Number /// /// ///	Revision Number		
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TEXT Energy Industry Identification System (EIIS) codes are identified in the text as [XX]

A. CONDITION PRIOR TO EVENT

MODE 1 - Power Operations RX Power 99% RCS [AB] Temperature/ Pressure 559°F/2235 psig

B. DESCRIPTION OF EVENT

On August 11, 1994, Periodic Test (PT) 11B-2A, 2A Emergency Diesel Generator (EDG) [EK] Fuel Oil Transfer Oil Pump Performance Test, was performed by the Equipment Operator (EO). During the performance of the test, the EO incorrectly attributed the vibration data to the wrong fuel oil transfer pump (FOTP) while storing collected data on the hand held minicomputer for trending purposes. The EO manually transferred the collected vibration data to the correct PT 11B-2A data sheets and did confirm the vibration readings met the acceptance criteria.

On August 12, 1994, the Vibration Coordinator identified the attribution error made by the EO as well as a similar error made by a different EO while downloading the collected data for trending purposes. Because of software limitations associated with manipulating data, the Vibration Coordinator focussed on correcting the attribution errors and performed only a cursory review of the collected data.

PT-11B-2A was logged as satisfactorily complete by the Operations Surveillance Coordinator on August 16, 1994.

On September 2, 1994, the In-Service Testing (IST) Engineer was reviewing the results of PT-11B-2A and discovered that the vibration readings were low relative to the previous test. The IST engineer consulted with the Vibration Coordinator to determine why the readings had dropped. A review of the vibration frequency spectrum showed a 'ski slope' spectrum at low frequency for all vibration data points. This type of spectrum is indicative of incorrect vibration readings. Because the allowed interval for IST testing per Technical Specification 4.0.3 was exceeded, the 2A EDG fuel oil transfer pumps were declared inoperable. Since the fuel oil transfer pumps are support equipment for 2A EDG, the 2A EDG was also declared inoperable.

Upon discovery of the missed surveillance, Unit 2 entered Limiting Condition for Operation (LCO) 3.15.2.C for the inoperable EDG with an allowed surveillance interval of 72 hours. Within three hours of declaration of the inoperable 2A EDG, the PT-11B-2A was reperformed on both of the associated FOTPs. The vibration readings were acceptable, the 2A EDG was declared operable, and Unit 2 exited the LCO 3.15.2.C.

C. APPARENT CAUSE OF EVENT

The cause of exceeding the allowed interval for IST testing was management deficiency. A spectral analysis is not required to be performed for all vibration data before the PT is declared acceptable. The spectral analysis is immediately able to identify if the data was correctly obtained. However, the people who perform the PT are not the same people who are responsible for performing the spectral analysis. In addition, the existing process for reviewing the PT does not require the IST or Vibration Coordinators to review the data prior to determining operability of the equipment.

The cause of the vibration readings being incorrectly taken was management deficiency. The personnel who take the vibration readings do not take these readings frequently enough to become proficient at the task. Originally, a hand held analog meter was used to take one overall vibration amplitude readings. Over a year ago, a hand held minicomputer was purchased to take these readings. The hand held minicomputers are capable of storing numerous overall vibration amplitudes, storing frequency spectrum data, storing preloaded machine vibration routes, performing real time vibration analysis, performing motor current signature analysis, and downloading the information through a computer diskette to a database for storing the data for additional analytical work. Being a more complex piece of test equipment, it is also more susceptible to undetected problems when used by a person who is unfamiliar in analyzing spectral data.

Erroneous readings will result by connecting the vibration accelerometer to the direct current (DC) port of the hand held minicomputer. The DC port is used to connect a speed probe for complex vibration analysis and is never used for routine vibration readings. The vibration accelerometer should be attached to the alternating current (AC) port. A guideline for using the hand held minicomputer located with the vibration equipment sign out log clearly directs the user to connect the vibration probe to the AC port. Both ports are labeled appropriately. A review of the training lesson plan for the Equipment Operator vibration training clearly states that the probe should be attached to the AC port of the meter. The same erroneous readings as seen in the PT-11B-2A were obtained by connecting the vibration probe to the DC port and taking data. This was duplicated by the Vibration Coordinator on September 8, 1994.

Erroneous readings will also result if the vibration cable has an electrical short. Readings using a shorted cable can be intermittent or constant depending on the severity of the short. The readings will either appear good or bad. One has to review the spectral data to determine whether or not a problem exists. Erroneous readings will also result if the vibration probe is not securely attached to the cable. Erroneous readings will also result if cable is moved during data acquisition. The overall value of the readings in either case may appear to be acceptable or appear to be problem. The problem may also be intermittent or constant. An individual must be trained in how to interpret the spectral data to determine if the values are valid. Additionally an individual must perform these readings on a routine basis to gain the necessary experience to allow them to identify problems in the field during data acquisition.

C. APPARENT CAUSE OF EVENT (Continued)

A contributing cause of the event was work control/planning deficiency. The PT was performed nine days after its due date and not logged as complete until fourteen days after its due date, leaving only nine days for additional reviews prior to the critical date. This is allowed per Technical Specifications but puts undue burden on the reviewers of the surveillance who are not currently in the review process.

D. SAFETY ANALYSIS OF EVENT

The safety significance of the event was minimal. At no time were the fuel oil transfer pumps incapable of performing their safety function. The vibration readings taken on September 2, 1994 showed that the pumps were operating acceptably and the only problem was in the data acquisition. During this event, the 2A EDG would have performed its intended function as expected.

E. CORRECTIVE ACTIONS

1. The 2A EDG fuel oil transfer pumps were run on September 2, 1994 and vibration readings recorded using PT-11B-2A. The readings were normal for the pumps and spectral analysis showed that the readings were valid.

2. The vibration program administrative procedure will be revised to require the Vibration Coordinator to perform spectral analysis on IST pumps PTs. (304-180-94-01004)

3. The IST engineer has provided the surveillance clerk a list of all IST PTs, with instructions to notify the IST engineer immediately when they are received so that a timely review can occur.

4. System engineering along with Operations will review the current assignment of equipment operators performing vibration data acquisition. This review will determine the qualifications required and what department is most appropriate to take vibration readings. If the data acquisition remains with Operating, the department will incorporate all IST pump PT's to include a review signature block for the Vibration Coordinator prior to declaring the PT acceptable. (304-180-94-01001)

5. The IST engineer and Vibration Coordinator will discuss with the electronic work control system (EWCS) coordinator a possible 'for information notification' when a surveillance is performed. (304-180-94-01002)

6. The Vibration Coordinator will review other vibration spectral readings taken during the last quarter. Any additional discrepancies which declare equipment inoperable will be documented as a supplement to this LER. (304-180-94-01003)

F. PREVIOUS EVENTS

A Nuclear Tracking System database search was performed on the subject containing "In Service Test", "Vibration" or "Surveillance" and two events were located. License Event Report 2-93-004 documented where the IST Coordinator failed to recognize a 25% increase in stroke time on 2MOV-CS0002, thus missing an increased surveillance requirement. The corrective actions from LER 2-93-004 would not have prevented LER 2-94-007.

LER 2-94-005 was also reviewed for applicability. The corrective actions would not have prevented LER 2-94-007.

G. COMPONENT FAILURE DATA

None