NRC Research and/or Technical Assistance Rept

PDR

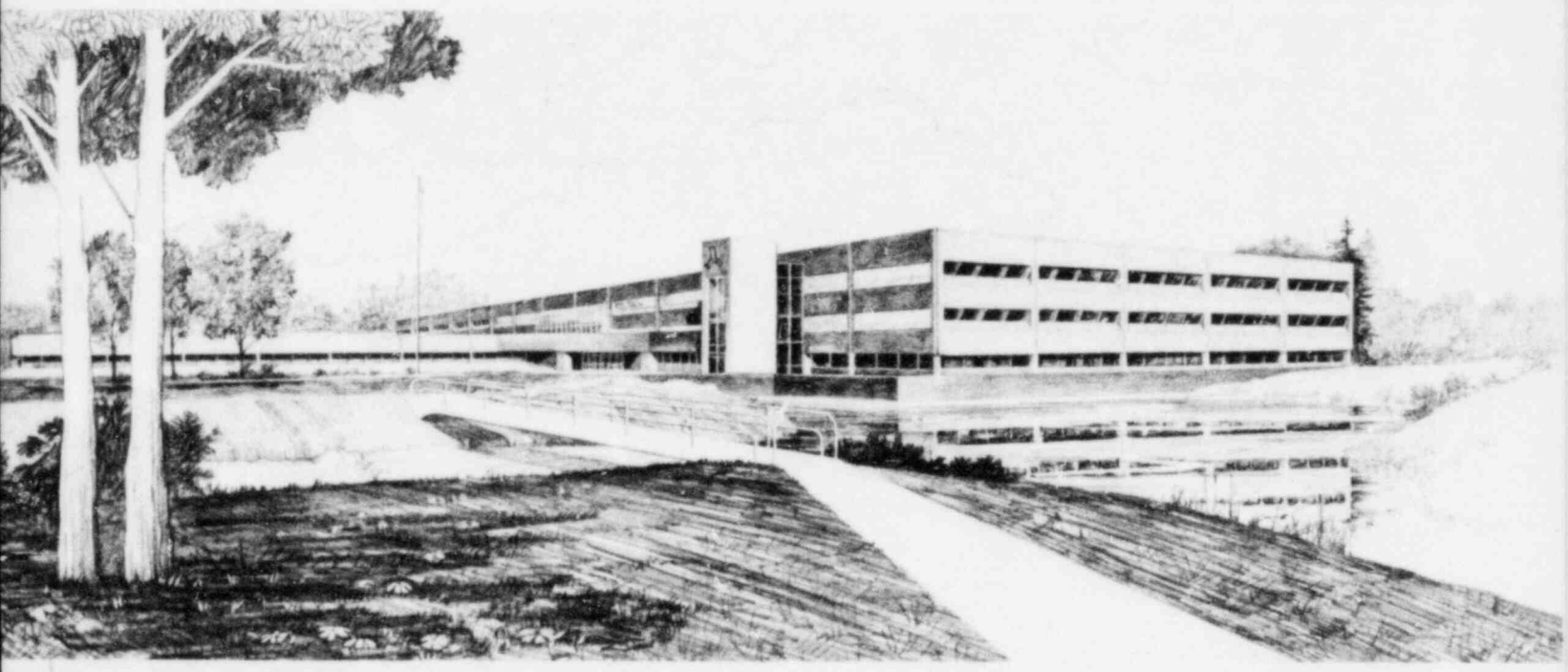
EGG-EA-6074

OCTOBER 1982

QUICK LOOK AT LICENSEE EVENT REPORTS OF BATTERIES AND BATTERY CHARGERS AT U.S. COMMERCIAL NUCLEAR POWER PLANTS JANUARY 1, 1976 TO DECEMBER 31, 1981

S. R. Brown
M. Trojovsky

Idaho National Engineering Laboratory
Operated by the U.S. Department of Energy



This is an informal report intended for use as a preliminary or working document

Prepared for the
U.S. NUCLEAR REGULATORY COMMISSION
Under DOE Contract No. DE-AC07-76ID01570
FIN No. A6276

EG&G Idaho

8212010474 821031
PDR RES
8212010474 PDR

EG&G Idaho, Inc.

FORM EG&G-398
(Rev. 03-82)

INTERIM REPORT

Accession No. _____

Report No. EGG-EA-6074

Contract Program or Project Title:

LER Evaluations

Subject of this Document:

Quick Look at Licensee Event Reports of Batteries and Battery Chargers at U.S. Commercial Nuclear Power Plants, January 1, 1976 to December 31, 1981

Type of Document:

Data Summary Report

Author(s):

S. R. Brown
M. Trojovsky

Date of Document:

October 1982

Responsible NRC Individual and NRC Office or Division:

R. C. Robinson, Division of Risk Analysis

This document was prepared primarily for preliminary or internal use. It has not received full review and approval. Since there may be substantive changes, this document should not be considered final.

EG&G Idaho, Inc.
Idaho Falls, Idaho 83415

Prepared for the
U.S. Nuclear Regulatory Commission
Washington, D.C.
Under DOE Contract No. DE-AC07-76ID01570
NRC FIN No. A6276

INTERIM REPORT

ABSTRACT

This report presents data summaries of Licensee Event Reports (LERs) of batteries and battery chargers at U.S. commercial nuclear power plants from January 1, 1976, through December 31, 1981. The LERs are sorted according to plant, system, failure modes, failure causes, human factors, and activity resulting in discovery. In addition, common cause and recurring events are identified. Summary tables are provided.

NRC FIN No. A6276

SUMMARY

In support of the Nuclear Regulatory Commission's (NRC's) effort to gather and analyze failure data concerning nuclear power plants, EG&G Idaho's Reliability and Statistics Branch reviewed Licensee Event Reports (LERs) (both qualitatively and quantitatively) in an attempt to extract reliability information. LERs submitted from the utilities to the NRC from January 1, 1976, through December 31, 1981, are the source of information used in this report. This report focuses on LERs pertaining to batteries and battery chargers in all systems of commercial nuclear power plants within the United States--with the exception of four plants considered atypical.

A computerized data base of component/system operational experiences (LERs) categorized by standard reliability characteristics was developed to provide an efficient and accurate way of retrieving and sorting the various reliability data. The data base contains a coded description of the original LERs. The plant reporting the event, the date of the event, the failure mode and cause, and the type of component are just a few of the different types of reliability information contained in the computer data file. Data summaries relating to batteries and battery chargers categorized by NSSS vendor, plant, year, system, failure modes and causes, activity resulting in discovery, type of event, and event classification are provided.

Of the 21,021 LERs screened, 169 described battery and battery charger events considered within the scope of this report. From these 169 LERs, 212 one-line descriptions were derived and entered into the data base. However, 48 of the one-line descriptions have "test not performed" as the failure mode and hence do not represent true faults. Of the remaining 164 one-line descriptions, 109 describe events involving a total of 120 batteries. The remaining 55 one-line descriptions describe events involving a total of 61 battery chargers.

Because subjective judgments had to be made regarding pertinence of recorded events, and because some component faults may not be recorded in the LERs, the component faults summarized in this report should be interpreted as only tentative gross indicators of true fault trends. The individual analyst must validate the applicability of the LER faults for specific uses.

FOREWORD

This report was prepared by EG&G Idaho's Reliability and Statistics Branch for the U.S. Nuclear Regulatory Commission's (NRC's) Office of Nuclear Regulatory Research, Division of Risk Analysis (DRA), Risk Methodology and Data Branch, under NRC FIN No. A6276. The project was undertaken at the request of personnel in the Reactor Risk Branch of DRA who are studying battery and battery charger events. They will be generating failure rate estimates for these events using the results of this study. Therefore, this report differs from the Licensee Event Report "Data Summary" NUREGs in that it is just a "quick look" at the data and does not contain failure rate estimates.

ACKNOWLEDGMENTS

Sincere appreciation is expressed to the following persons for their assistance in the preparation of this report:

C. D. Gentillon for her helpful suggestions.

K. Culbertson and B. Munson for their conscientious and timely efforts in word processing and text composition.

CONTENTS

TABLES

NOMENCLATURE

Terms

Component	A component is the largest entity of hardware for which data are most generally collected and expected to be available (for example, pump with motor, valve with operator, amplifier, pressure transmitter). It is generally an off-the-shelf item procured by the system designer as a basic building block for his system. It would be distinguished from seals, bearings, nuts, bolts, and other piece parts from which the component is manufactured.
System	A system is a collection of components arranged so as to provide a desired function (for example, Containment Spray System, Residual Heat Removal System, High Pressure Coolant Injection System).
Fault	A fault is any undesired state of a component or system. A fault does not necessarily require failure (for example, a battery charger might not charge properly because of some other component input or human error--a "command fault").
Command Fault	A command fault is an event in which the component did not function as required, not because of a failure in the component, but because of inputs or lack of inputs to the component as supplied by personnel, other components, or the environment external to the component. This is a reversible state of the component that can be corrected once the faulty input is corrected. No component repair is required.
Failure	A failure is a subset of a fault and represents an irreversible state of a component such that it must be repaired in order for it to perform its design function. Failures are sometimes classified as primary or secondary failures. A primary failure is the so-called "random failure" found in the literature. It results from no external cause. A secondary failure results when the component is subject to conditions that exceed its design envelope (for example, excessive voltage, pressure, shock, vibration, temperature). However, for this report, no distinction has been made between these two failure classifications.
Common Cause Failure	Common cause failures are two or more redundant components failing together or having the potential to fail within a relatively short period of time

	because of a single cause. The common cause events that cause multiple failures are usually secondary failures. Human errors are a special type of failure cause that are usually considered common cause for multiple failures.
Failure Cause	The identified cause that prevented the component from performing its intended function.
Failure Mode	The description of the manner in which a component ceases to perform its intended function.

Acronyms and Abbreviations

admin	Administrative
adq	Adequate
AFWP	Auxiliary Feed Water Pump
AH, A.H.	Amp-hours
assoc	Associated
avail, avl	Available
batt, bttry	Battery
bkr, brkr	Breaker
bldg	Building
BWR	Boiling Water Reactor
chrg, chrgr	Charger
ckt	Circuit
cktbrk	Circuit breaker
cnnctr	Connector
cntct	Contact
cntrl	Control
con	Conditions
connect	Connections/Connector
decrs	Decrease

det	Detector
dfctv	Defective
DG, D/G	Diesel Generator
dischr	Discharge
DP, D/P	Differential Pressure
DRA	Division of Risk Analysis
elec	Electrolyte
elec. strat.	Electrolyte stratification
emer	Emergency
equal, equalzg	Equalizing
freq	Frequency
grnd	Ground
HV	High Voltage
hydrom	Hydrometer
ICV	Individual Cell Voltage
inadq	Inadequate
incrs	Increase
inop	Inoperable
instal	Installation/Installment
instr	Instrument
invest	Investigate
LCO	Limited Condition for Operation
LER	Licensee Event Report
lmt	Limit
lmtr	Limiter
min	Minimum
NRC	Nuclear Regulatory Commission

NSIC	Nuclear Safety Information Center
NSSS	Nuclear Steam Supply System
op	Operate/Operation
OOS	Out of Service
OOT	Out of Tolerance
pers, person	Personnel
proc	Procedure
prox	Proximity
PWR	Power/Pressurized Water Reactor
rdg	Reading
recom	Recommend
reg	Regulator
repl, rplc, rplcd	Replace/Replaced
req	Required
rng	Range
SD, S/D	Shutdown
SG, S.G.	Specific Gravity
sig	Signal
st	Station
surv	Surveillance
SW	Service Water
sys	System
temp	Temperature/Temporary
term	Terminal
trp, trpd	Trip/Tripped
tech spec, T.S.	Technical Specification
UPS	Uninterruptible Power System

volt, voltg	Voltage
wrng	Wiring/Wrong
xstr	Transistor

QUICK LOOK AT LICENSEE EVENT REPORTS OF BATTERIES AND BATTERY CHARGERS AT U.S. COMMERCIAL NUCLEAR POWER PLANTS JANUARY 1, 1976 TO DECEMBER 31, 1981

INTRODUCTION

In support of the Nuclear Regulatory Commission's (NRC's) effort to gather and analyze failure data concerning nuclear power plants, Licensee Event Reports (LERs) are being reviewed (both qualitatively and quantitatively) in an attempt to extract reliability information. LERs submitted from the utilities to the NRC from January 1, 1976, through December 31, 1981, are the source of information used in this report. This report focuses on LERs pertaining to batteries and battery chargers in all systems of commercial nuclear power plants within the United States--with the exception of four plants considered atypical.

The reliability information gleaned from these LERS was encoded into a data file and then stored in a computer. The data file contains a coded description of the original LERs. The plant reporting the event, the date of the event, the failure mode and cause, and the type of component are just a few of the different types of reliability information contained in the computer data file. These features make the data file an efficient and accurate means of obtaining various statistics for use in this report and future analyses. Data summaries relating to batteries and battery chargers categorized by standard reliability chacteristics are provided.

The data summaries reported herein are based on the component faults reported in the LER system. These faults do not necessarily consist of all faults for any given component. Plant status (at power, cold shutdown, refueling, etc.) and system or subsystem impact are two factors which can determine whether or not a fault is reported.

In this report are the assumptions, definitions, and limitations used in carrying out the analysis. Appendix A discusses a few causes (though not all) of the variations in LER reporting. Appendix B gives general

plant information. Appendices C through J contain sorts of the LERs by NSSS vendor, component, system, failure mode, failure cause, human factors, activity resulting in discovery, and records contained in NUREG-0666.[1] Appendix K contains a sort by NSSS vendor containing additional information (manufacturer, voltage rating, etc.) not presented in the previous sorts.

LER EVALUATION AND CODING METHODOLOGY

Scope

Component Boundaries

Battery. Where an output breaker was provided between the battery and its load as found in major battery bank systems (i.e., station and switchyard battery systems), the output breaker and all components required for the proper operation of the battery or battery bank were considered within the bounds of the battery or battery bank. In smaller battery systems such as engine starting battery systems, only the battery, associated cables, and connectors between the battery and its load were considered within the battery boundaries.

Battery Charger. All electrical and mechanical components between the battery charger's supply breaker and output breaker and any external controls required for the proper operation of the battery charger were considered part of the battery charger. The supply breaker was not considered part of the battery charger, while the output breaker was considered part of the battery charger.

LER Selection

In order to ensure the completeness of the LERs pertaining to batteries and battery chargers the entire NRC LER file was reviewed for the period covering January 1, 1976, to December 31, 1981. The total number of LERs reviewed for this report was 21,021. The LERs were screened and excluded for the following reasons:

1. The LERs pertained to other components outside the scope of this report.

2. The LERs were submitted by plants considered atypical. These plants were Fort St. Vrain (gas-cooled), Humboldt Bay (BWR/1,

63 megawatts), and LaCrosse (the only plant with Allis-Chalmers as the NSSS vendor). Indian Point 1 also differs from the 72 plants evaluated in this report. It is considered atypical because it was shutdown October 31, 1974, and was subsequently defueled. Dresden 1 is considered in this report, but any events after October 31, 1978, were not considered because of the extended shutdown which started on October 31, 1978, and which was still in effect on December 31, 1981. Three Mile Island 1 and 2 were considered in this report; however, events associated with these plants after the accident on March 28, 1979, were not considered. Three Mile Island 2 is still shutdown, and on December 31, 1981, Three Mile Island 1 was still shutdown due to a restraining order.

3. The LERs were submitted prior to the date of initial criticality for the respective plant.

Of the 21,021 LERs screened 169 described battery and battery charger events considered within the scope of this report. Details of the results of the screening process are included in a later section of this report.

LER Classification

The purpose of this report is to provide quantitative and qualitative reliability data on selected batteries and battery chargers in commercial nuclear power plants. A computerized data base of component/system operational experiences (LERs) categorized by standard reliability characteristics was developed to provide an efficient and accurate way of retrieving and sorting the various reliability data.

The NRC LER system contains a centralized source of component/system operational experiences of off-normal events in the nuclear industry. The NRC LER file, however, is not a reliability data base. Therefore, direct transcription of these LERs for reliability-data purposes is not usually possible. At times, there is some correlation between what is coded in a LER and what would be desired in our data base. In these cases, a direct

transcription was made. However, the descriptive text of the LER provided the bulk of the information needed for the data base. A discussion of the assumptions and definitions used in coding our data is provided below.

The data base consists of one-line descriptions of battery and battery charger events contained in the LERs. Although most LERs contain only a single report involving one event (a failure or a command fault), some LERs contain multiple reports, each involving either single or multiple events. For the case where there exists multiple reports in the LER, an appropriate one-line data record was created in the data base for each report contained in the LER. For the case where the LER describes multiple failures involving like components, information was encoded into the one-line data record to account for the number of events.

In order to extract as much pertinent information as possible from the information provided in the original LER, and, at the same time, to restrict the information to one line of computer output per LER, the following coding scheme was developed. The order of discussion that follows is the order in which the various fields appear in the printed one-line descriptions of the battery and battery charger events. The headings used for the corresponding fields in the one-line descriptions are contained in parentheses following the topic headings used below.

NSSS Vendor (NSSS)

The NSSS field indicates the vendor associated with the plant submitting the LER report. A single-character field is used to store and display the vendor code. This field can be used as a sort key. The following list gives the code and corresponding NSSS vendor.

Code	NSSS Vendor
B	Babcock & Wilcox
C	Combustion Engineering
W	Westinghouse
G	General Electric

Plant (PLANT)

A three-character field was used to identify the commercial power plant responsible for submitting eacn LER. Because of the relatively large number of plants used in the report, a list of the plants and codes will not be given here. Appendix B provides this information. This field can be used as a sort key.

Control Number (CONTROL NUMBER)

To identify each one-line record within the data file, and to provide a cross-reference with the actual LER submitted to the NRC, the unique six-digit control number assigned to the report by the NRC was entered into the CONTROL NUMBER field. There were some instances of several different reports being listed in the narrative summary of a single LER. To accommodate this situation, an alphabetic character was added to the six-digit number in order to separately identify each report. Thus, traceability back to the original LER number was maintained, yet each report remained unique. When a single LER reported more than one instance of the same event (e.g., "no output from all UPS battery banks") in the summary description, an asterisk (*) was placed after the control number to flag the coded one-line description as containing multiple events. The corresponding number of events was then entered in the FAIL # field so that each event could be accounted for. The CONTROL NUMBER field can be used as a sort field, but it is intended for data record identification within the data file.

Event Date (EVENT DATE)

The event date in the one-line data record corresponds to the event date reported in the LER (i.e., the date the failure was discovered). A six-digit field was used to record the date of the event: two digits each, for month, day, and year. The month, day, or year can be used as sort keys.

Component Type (COMP)

Each component was identified by a two-character field: BA and BC were used to code batteries and battery chargers, respectively.

System (SYSTEM)

A three-character field was used to record the reactor type and system: a one-character subfield containing an A or a B (which is not printed in the one-line description), for a PWR or BWR reactor, respectively, and a two-character subfield containing the system code. Either of these subfields can be used as sort keys. The following is a list of system codes and descriptions.

Code	System
AM	Area monitor
DB	Emergency diesel generator
ES	Engineered safety feature
FP	Fire protection system
FW	Feedwater system
NM	Neutron monitoring battery
NN	Unknown/Unspecified/Other
SA	Automatic (reactor) depressurization (ADS)
SP	Special use batteries
ST	Station batteries/chargers
SW	Service water building batteries/chargers
SY	Switchyard batteries/chargers
UP	Uninterruptible power system (UPS)

Failure Code (FAILURE CODE)

Failures are summarized by a five-character alphanumeric field made up of: an alphabetic field for failure mode, a two-digit field for failure cause, and a two-digit field for subcause. The subcause field was added in this report because of the possibility of several events resulting in the final outcome.

Failure Mode. A single-character field was used to indicate the failure mode. The following list gives the failure mode codes and descriptions.

Code	Failure Mode
A	Reduced capability
B	No output
C	Unknown/Unspecified/Other
D	High current/voltage output
E	Low output voltage
G	High AC ripple on DC output
M	Maintenance replacement
T	Test not performed

Failure mode codes A through C were used in coding batteries, while codes A through G were used in coding battery chargers. Codes M and T were applicable in coding both battery and battery charger events. This field can be used as a sort key.

The failure modes should be self-explanatory, with the possible exception of the following:

1. Maintenance Replacement--LERs occasionally reported events that were potential problems. Examples of potential problems are, "battery cell voltage found below minimum" and "one cell of RDS battery found below minimum specific gravity." Although the batteries in these examples are still able to perform their designed functions and are, therefore, not failed, the reporting plant either recharged, repaired, or replaced them because it was felt that they might fail in the immediate future. Note that if the LER stated that full battery capacity was still available then "maintenance replacement" was used as the failure mode. Otherwise, "reduced capability" was used in low voltage or specific gravity situations that involved batteries.

2. Test Not Performed--This mode refers to failures of plant personnel to perform their duties concerning battery and battery

charger related directives and procedures. Examples of some "test not performed" events are as follows:

Mode Description	Cause Description
Surveillance not performed when required	Procedural deficiency
Individual float cell voltage measurement not done in the Station Battery Test	Personnel oversight

Events involving this mode are considered nonfailures in that the consequence of these omitted acts do not immediately affect the component's ability to perform its function.

Failure Cause. A two-digit field was used to indicate failure cause. This field can be used as a sort key. The following list gives the failure cause codes and descriptions.

Code	Failure Cause
00	Unknown
01	Personnel operation
02	Personnel maintenance
03	Personnel testing
04	Design/Fabrication/Construction/Quality control
05	Defective procedures
06	Extreme environment
08	Corrosion
10	Normal wear/Natural end of life
11	Electrical malfunction
12	Mechanical malfunction
13	Piece part failure
14	Low specific gravity
15	Stratification
16	High electrolyte solution level
17	Low electrolyte solution level
18	Insufficient charge
20	Defective/Weak cells
21	Voltage regulator malfunction
22	Current limiter malfunction
23	Current controller malfunction
24	Voltage limiter malfunction
25	Thermal overload protection
26	Cooling fan/Ventilation malfunction

Code	Failure Cause
27	Charge control malfunction
28	Charge control timer malfunction
29	Rectifier problem
30	Short circuit
32	Electrolyte dilution
33	Faulty cable/connectors
34	Charger malfunction

Failure Subcause. A two-digit field was used to indicate failure subcause, which uses the same codes and descriptions as the failure cause field. This field can be used as a sort key.

Activity Resulting in Discovery (ACTIVITY)

This single-character alphanumeric field contains a code indicating the activity taking place that led to the discovery of the event. This field can be used as a sort key. The codes and activities are listed as follows:

Code	Activity
A	Testing (unspecified)
B	Normal load testing
C	Monthly testing
D	Weekly testing
E	Quarterly testing
F	Refueling testing
G	18-month testing
H	5-year testing
M	Maintenance
N	Normal plant operation
R	Records review
U	Unknown

Type of Event (TYPE)

The type of event was coded in a single-character field. The following is the list of the codes corresponding to the type of events:

Code	Type of Event
B	Recurring common cause
C	Common cause
R	Recurring
S	Command fault
T	Recurring command fault
U	Common cause command fault
V	Recurring common cause command fault
Blank	Random

In addition to random events, we were able to identify events as being either recurring, common cause, or command faults, as well as combinations of these three types.

Recurring in this report means two or more LERs from a plant (unit) or plants at one site (for example, Quad-Cities 1 and 2) reporting problems of a similar enough nature that some note should be taken. No attempt is made to compare events at Quad-Cities 1 with events at Zion 1 (that is, to identify intersite failures). An example which illustrates recurring failures would be two separate LERs from one plant stating that, "battery charger output breaker, No. 2, failed open due to excessive heat caused by a thermal overload." Both of these events would be classified as recurring. One other criterion for classifying an event as recurring is to have an LER state, "this is a recurring failure," or "similar failures have been reported on this component."

A common cause failure classifies not only simultaneous faults of two or more components, but also includes single faults where the potential for two or more component failures exists. The latter are considered common cause candidates. If there was any doubt as to whether an event was common cause or not common cause, then the event was coded as common cause. If the same common cause was reported more than once at one plant, this was coded as recurring common cause.

A command fault is a fault where there is no actual physical failure of the component, but where the component is in the wrong state because of factors external to the component. External factors, such as human error or failure of a component that interfaces with the faulted component,

account for most command faults. For example, if a battery charger's AC supply breaker failed, leaving the battery charger inoperable, it is not a battery charger failure; the battery charger would operate satisfactorily if power were available. However, if there was any doubt as to whether the fault was a command fault or failure, then the fault was considered a failure. Recurring command faults describe events that include the criteria for both recurring and command faults. Common cause command faults occur when two or more components are affected by a single command fault. As before, these components do not experience an actual failure, but are in the wrong state due to input (or lack of input) from other components. When the reported problem was a recurring command fault, the appropriate code was used. When the event was both a recurring and common cause command, we used the recurring common cause command code to identify the fault.

Type of event can be used as a sort key.

Event Classification (CLASS)

When possible, events were classified as Frequency-of-Use-Related or Age-Related. In some cases, we could not specifically classify an event as either Frequency or Age; these events are coded Unknown. However, due to the limited information contained in the LERs, it was difficult to extract the necessary information directly from the LER narrative. Therefore, the classification method is subjective and care should be used in drawing conclusions from these data. This field can be used as a sort key. The following list shows the coding used for event classification.

Code	Event Classification
D	Frequency
T	Age
U	Unknown

Number of Failed Components (FAIL #)

The FAIL # field is a two-digit field used to store the number of components in each one-line data record. A blank in this field implies that the value in the field is one. This field is used for counting events or reports rather that sorting them.

Reports involving more than one component failure are assigned a number indicating how many components were involved in the report. Thus, the "Number of Failed Components" data are important because there is not a one-to-one relationship between the number of reports and the number of components in the data file. Where the LER was not explicit on the number of failed components, the number appearing in FAIL # was subjectively assigned and noted in the flagging field (described below).

Failure Mode Description (FAILURE MODE DESCRIPTION)

A short, concise description of the LER failure mode was condensed into a 50-character alphanumeric field called FAILURE MODE DESCRIPTION. FAILURE MODE DESCRIPTION is not a sort field.

Failure Cause Description (FAILURE CAUSE DESCRIPTION)

A short, concise description of the LER failure cause was condensed into a 41-character alphanumeric field called FAILURE CAUSE DESCRIPTION. FAILURE CAUSE DESCRIPTION is not a sort field.

Both the FAILURE MODE DESCRIPTION and FAILURE CAUSE DESCRIPTION may contain information in addition to that appearing in coded form. The battery identification number, such as "radiation monitor 2R12A battery pack"; or a series of failure causes, such as "broken terminal on shutdown board battery because of maintenance error due to procedural problems"; or the "as found" condition of related equipment that may have affected the proper operation of the battery or battery charger, such as "supply breaker for a battery charger found open", are examples of additional information contained in these fields.

Additional Information

The items discussed so far are all that can be printed on a single line of computer printout. Additional information is available, however, and is discussed below. All fields, with the exception of CELL NO., in the following section can be used as sort keys.

Manufacturer Code (MANUFACTURER CODES). The MANUFACTURER field is a four-character alphanumeric field used to store component manufacturer data. The manufacturers' names and codes were obtained from Exhibit J of Reference 2. LERs obtained from the Nuclear Safety Information Center (NSIC) Data Base have no manufacturer listed other than those found in the descriptions. Some LERs failed to report any manufacturer and were coded as blanks in the MANUFACTURER field. The following is a list of manufacturer codes and names for this report.

Code	Manufacturer
C173	C&D Batteries, Division of Eltra Corp.
C742	Cummins Engine Co., Inc.
E147	Electro-Motive Division of G.M.
E226	Eltra Corporation (Eletra)
E355	Exide Industrial Division
E359	Exxon Chemical Company
F013	Fairchild Hiller Products
G080	General Electric Company
G185	Gould-National Batt
G190	Goulds Manufacturing
G195	Goulds Company (Goulds)
L015	La Marche Mfg. Co.
P319	Power Conversion Products, Inc.
U125	Universal Industries
V115	Victoreen Instrument Division
W059	Waukesha Elec. Mach. Mfg. Company
W120	Westinghouse Electric Corporation
Blank	Manufacturer not specified

One should be cautious in using this manufacturer information because in many LERs the manufacturer listed was not the manufacturer of interest but was the manufacturer of a particular piece part or subcomponent.

Voltage Rating (VOLTAGE RATING). The VOLTAGE RATING field is a three-digit field used to store component voltage data when the LER provided this information.

Repair Time (REPAIR TIME). The REPAIR TIME field is a three-digit field used to store component repair time when available in hourly units.

Flagging (FLAGGING). Each one-line data record was evaluated to determine whether or not the event might need to be "flagged" for possible future evaluation. The following is a list of the codes and descriptions used in the FLAGGING field.

Code	Flagging
A	Failed component caused an accident or scram
B	Component failed to mitigate an accident or scram
C	Safety significance
D	Unknown component failure number
E	Unknown cell number
F	Unknown component failure and cell numbers
N	LERs obtained from the NSIC data base's NUREG/CR-2000
Y	Events found in NUREG-0666

Number of Affected Cells (CELL #). The CELL # field is a two-digit field used to store the number of battery cells affected by a given event.

Plant LER Number. In addition to a plant docket number, each plant assigns a number to each LER that it submits. This number is assigned sequentially within each calendar year to every LER submitted by the plant. At the end of the calendar year the plant LER number will start again with 001 for the next year.

Report Type. LERs are either (a) two-week reports, (b) 30-day reports, or (c) other. This information was coded and stored for possible future use. This information was not found in the NSIC data base's NUREG/CR-2000.

SUMMARY OF RESULTS

As was mentioned earlier, there were 21,021 LERs screened for this report. Of these LERs, 169 were selected for use in this analysis. From these 169 LERs, 212 one-line descriptions were derived and entered into the data base. However, 48 of the one-line descriptions have "test not performed" as the failure mode and hence do not represent true faults. Of the remaining 164 one-line descriptions, 109 describe events involving a total of 120 batteries. The remaining 55 one-line descriptions describe events involving a total of 61 battery chargers.

The 212 one-liners used to produce sorts on the various data base fields are contained in Appendices C through I as follows:

Appendix	Field
C	NSSS vendor
D	Component
E	System
F	Failure mode
G	Failure cause
H	Human factors
I	Activity resulting in discovery

In addition, events found within the scope of both this report and the report, "A Probabilistic Safety Analysis of DC Power Supply Requirements for Nuclear Power Plants" (NUREG-0666),[1] are listed in Appendix J for those who wish to compare the two reports. Data concerning manufacturer, voltage rate, repair time, flagging, and cell number can be found in Appendix K.

Summary tables were generated from the 164 one-line descriptions having failure modes other than "test not performed." Tables 1 through 10 summarize battery and battery charger events by component and, respectively, the following fields: NSSS vendor, plant, year, system, failure mode, failure cause, failure subcause, activity resulting in discovery, type of event, and event classification. Table 11 presents the codes used in the one-liners and will precede each sort of the one-line

data records. These sheets provide a convenient reference for decoding the one-line data records.

Because subjective judgments had to be made regarding pertinence of recorded events, and because some component faults may not be recorded in the LERs, the component faults summarized in this report should be interpreted as only tentative gross indicators of true fault trends. The individual analyst must validate the applicability of the LER faults for specific uses.

TABLE 1. SUMMARY OF BATTERY AND BATTERY CHARGER EVENTS BY COMPONENT AND NSSS VENDOR

NSSS VENDOR	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Batteries						
Babcock & Wilcox	5	4.24%	--	--	5	4.16%
Combustion Engineering	4	3.53%	3	42.85%	7	5.83%
Westinghouse	29	25.66%	2	28.57%	31	25.83%
General Electric	75	66.37%	2	28.57%	77	64.16%
COMPONENT SUBTOTALS	113		7	TOTAL	120	
Battery Chargers						
Babcock & Wilcox	2	4.00%	--	--	2	3.27%
Combustion Engineering	6	12.00%	1	9.09%	7	11.47%
Westinghouse	19	38.00%	6	54.54%	25	40.98%
General Electric	23	46.00%	4	36.36%	27	44.26%
COMPONENT SUBTOTALS	50		11	TOTAL	61	

TABLE 2. SUMMARY OF BATTERY AND BATTERY CHARGER EVENTS BY COMPONENT AND PLANT

PLANT	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Batteries						
Babcock & Wilcox Plants						
Crystal River 3	1	0.88%	--	--	1	0.83%
Davis-Besse 1	3	2.65%	--	--	3	2.50%
Oconee 3	1	0.88%	--	--	1	0.83%
Combustion Engineering Plants						
Calvert Cliffs 1	2	1.76%	--	--	2	1.66%
Calvert Cliffs 2	--	--	1	14.28%	1	0.83%
Millstone 2	1	0.88%	--	--	1	0.83%
Palisades	1	0.88%	2	28.57%	3	2.50%
Westinghouse Plants						
Beaver Valley 1	3	2.65%	--	--	3	2.50%
Donald C. Cook 2	2	1.76%	--	--	2	1.66%
Joseph M. Farley 1	7	6.19%	--	--	7	5.83%
McGuire 1	1	0.88%	--	--	1	0.83%
North Anna 1	1	0.88%	--	--	1	0.83%
North Anna 2	2	1.76%	--	--	2	1.66%
H. B. Robinson 2	2	1.76%	--	--	2	1.66%
Salem 1	2	1.76%	--	--	2	1.66%
Salem 2	1	0.88%	--	--	1	0.83%
Sequoyah 1	3	2.65%	--	--	3	2.50%
Surry 2	2	1.76%	--	--	2	1.66%
Trojan	1	0.88%	--	--	1	0.83%

(CONT.)

PLANT	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Batteries (Cont.)						
Westinghouse Plants (Cont.)						
Turkey Point 3	1	0.88%	--	--	1	0.83%
Yankee Rowe	1	0.88%	--	--	1	0.83%
Zion 1	--	--	2	28.57%	2	1.66%
General Electric Plants						
Browns Ferry 1	1	0.88%	--	--	1	0.83%
Browns Ferry 2	1	0.88%	1	14.28%	2	1.66%
Big Rock Point	45	39.82%	--	--	45	37.50%
Brunswick 1	2	1.76%	--	--	2	1.66%
Dresden 1	2	1.76%	--	--	2	1.66%
Dresden 3	2	1.76%	1	14.28%	3	2.50%
Edwin I. Hatch 2	8	7.07%	--	--	8	6.66%
James A. Fitzpatrick	8	7.07%	--	--	8	6.66%
Monticello	1	0.88%	--	--	1	0.83%
Oyster Creek 1	1	0.88%	--	--	1	0.83%
Peach Bottom 3	1	0.88%	--	--	1	0.83%
Quad-Cities 1	1	0.88%	--	--	1	0.83%
Vermont Yankee	2	1.76%	--	--	2	1.66%
COMPONENT SUBTOTALS	113		7	TOTAL	120	

TABLE 2. (CONT.)

PLANT	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Battery Chargers						
Babcock & Wilcox Plants						
Three Mile Island 2	2	4.00%	--	--	2	3.27%
Combustion Engineering Plants						
Arkansas Nuclear One 2	3	6.00%	1	9.09%	4	6.55%
Palisades	1	2.00%	--	--	1	1.63%
St. Lucie	2	4.00%	--	--	2	3.27%
Westinghouse Plants						
Beaver Valley 1	5	10.00%	--	--	5	8.19%
Donald C. Cook 1	--	--	1	9.09%	1	1.63%
Haddam Neck	2	4.00%	--	--	2	3.27%
Indian Point 3	2	4.00%	2	18.18%	4	6.55%
Joseph M. Farley 1	--	--	1	9.09%	1	1.63%
Prairie Island 1	1	2.00%	--	--	1	1.63%
Prairie Island 2	1	2.00%	--	--	1	1.63%
Salem 1	2	4.00%	--	--	2	3.27%
Salem 2	1	2.00%	1	9.09%	2	3.27%
Surry 2	2	4.00%	--	--	2	3.27%
Turkey Point 3	1	2.00%	--	--	1	1.63%
Yankee Rowe	2	4.00%	--	--	2	3.27%
Zion 1	--	--	1	9.09%	1	1.63%

TABLE 2. (CONT.)

PLANT	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Battery Chargers (Cont.)						
General Electric Plants						
Big Rock Point	1	2.00%	--	--	1	1.63%
Brunswick 1	1	2.00%	--	--	1	1.63%
Cooper Station	2	4.00%	1	9.09%	3	4.91%
Duane Arnold	1	2.00%	--	--	1	1.63%
Dresden 1	1	2.00%	--	--	1	1.63%
Dresden 3	1	2.00%	--	--	1	1.63%
Edwin I. Hatch 1	2	4.00%	--	--	2	3.27%
Edwin I. Hatch 2	6	12.00%	--	--	6	9.83%
Monticello	--	--	1	9.09%	1	1.63%
Oyster Creek 1	1	2.00%	--	--	1	1.63%
Pilgrim 1	3	6.00%	--	--	3	4.91%
Quad-Cities 2	1	2.00%	1	9.09%	2	3.27%
Vermont Yankee	3	6.00%	1	9.09%	4	6.55%
COMPONENT SUBTOTALS	50		11	TOTAL	61	

TABLE 3. SUMMARY OF BATTERY AND BATTERY CHARGER EVENTS BY COMPONENT AND YEAR

YEAR	FAILURES NUMBER OF EVENTS	FAILURES PERCENTAGE OF COMPONENT SUBTOTAL	COMMAND FAULTS NUMBER OF EVENTS	COMMAND FAULTS PERCENTAGE OF COMPONENT SUBTOTAL	TOTALS EVENTS	TOTALS PERCENTAGE OF COMPONENT TOTAL
Batteries						
1976	17	15.04%	1	14.28%	18	15.00%
1977	25	22.12%	1	14.28%	26	21.66%
1978	15	13.27%	--	--	15	12.50%
1979	9	7.96%	1	14.28%	10	8.33%
1980	20	17.69%	--	--	20	16.66%
1981	27	23.89%	4	57.14%	31	25.83%
COMPONENT SUBTOTALS	113		7	TOTAL	120	
Battery Chargers						
1976	8	16.00%	1	9.09%	9	14.75%
1977	8	16.00%	1	9.09%	9	14.75%
1978	9	18.00%	2	18.18%	11	18.03%
1979	4	8.00%	2	18.18%	6	9.83%
1980	8	16.00%	1	9.09%	9	14.75%
1981	13	26.00%	4	36.36%	17	27.86%
COMPONENT SUBTOTALS	50		11	TOTAL	61	

TABLE 4. SUMMARY OF BATTERY AND BATTERY CHARGER EVENTS BY COMPONENT AND SYSTEM

SYSTEM	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Batteries						
PWR Systems						
Area Monitor System	1	0.88%	--	--	1	0.83%
Emergency Diesel Generator	6	5.30%	--	--	6	5.00%
Fire Protection System	5	4.42%	--	--	5	4.16%
Feedwater System	1	0.88%	--	--	1	0.83%
Unknown/Unspecified/Other	12	10.61%	3	42.85%	15	12.50%
Station Batteries/Chargers	6	5.30%	2	28.57%	8	6.66%
Service Water Building Batteries/ Chargers	7	6.19%	--	--	7	5.83%
BWR Systems						
Area Monitor System	1	0.88%	--	--	1	0.83%
Emergency Diesel Generator	3	2.65%	--	--	3	2.50%
Fire Protection System	9	7.96%	--	--	9	7.50%
Neutron Monitoring Battery	2	1.76%	1	14.28%	3	2.50%
Unknown/Unspecified/Other	8	7.07%	1	14.28%	9	7.50%
Automatic (Reactor) Depressurization (ADS)	34	30.08%	--	--	34	28.33%
Special Use Batteries	1	0.88%	--	--	1	0.83%
Station Batteries/Chargers	10	8.84%	--	--	10	8.33%
Switchyard Batteries/Chargers	1	0.88%	--	--	1	0.83%
Uninterruptible Power System (UPS)	6	5.30%	--	--	6	5.00%
COMPONENT SUBTOTALS	113		7	TOTAL	120	

TABLE 4. (CONT.)

SYSTEM	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Battery Chargers						
PWR Systems						
Fire Protection System	2	4.00%	--	--	2	3.275
Unknown/Unspecified/Other	23	46.00%	6	54.54%	29	47.54%
Station Batteries/Chargers	2	4.00%	--	--	2	3.27%
Service Water Building Batteries/Chargers	--	--	1	9.09%	1	1.63%
BWR Systems						
Fire Protection System	1	2.00%	--	--	1	1.63%
Unknown/Unspecified/Other	7	14.00%	4	36.36%	11	18.03%
Station Batteries/Chargers	9	18.00%	--	--	9	14.75%
Switchyard Batteries/Chargers	3	6.00%	--	--	3	4.91%
Uninterruptible Power System (UPS)	3	6.00%	--	--	3	4.91%
COMPONENT SUBTOTALS	50		11	TOTAL	61	

TABLE 5. SUMMARY OF BATTERY AND BATTERY CHARGER EVENTS BY COMPONENT AND FAILURE MODE

FAILURE MODE	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Batteries						
Reduced Capability	68	60.17%	--	--	68	56.66%
No Output	31	27.43%	6	85.71%	37	30.83%
Unknown/Unspecified/Other	--	--	1	14.28%	1	0.83%
Maintenance Replacement	14	12.38%	--	--	14	11.66%
COMPONENT SUBTOTALS	113		7	TOTAL	120	
Battery Chargers						
Reduced Capability	6	12.00%	--	--	6	9.83%
No Output	33	66.00%	9	81.81%	42	68.85%
Unknown/Unspecified/Other	3	6.00%	--	--	3	4.91%
High Current/Voltage Output	2	4.00%	1	9.09%	3	4.91%
Low Output Voltage	3	6.00%	1	9.09%	4	6.55%
High AC Ripple on DC Output	1	2.00%	--	--	1	1.63%
Maintenance Replacement	2	4.00%	--	--	2	3.27%
COMPONENT SUBTOTALS	50		11	TOTAL	61	

TABLE 6. SUMMARY OF BATTERY AND BATTERY CHARGER EVENTS BY COMPONENT AND FAILURE CAUSE

FAILURE CAUSE	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Batteries						
Unknown	7	6.19%	--	--	7	5.83%
Personnel Operation	--	--	3	42.85%	3	2.50%
Personnel Maintenance	1	0.88%	2	28.57%	3	2.50%
Defective Procedures	2	1.76%	1	14.28%	3	2.50%
Normal Wear/Natural End of Life	2	1.76%	--	--	2	1.66%
Low Specific Gravity	41	36.28%	--	--	41	34.16%
High Electrolyte Solution Level	4	3.53%	--	--	4	3.33%
Low Electrolyte Solution Level	13	11.50%	--	--	13	10.83%
Insufficient Charge	4	3.53%	--	--	4	3.33%
Defective/Weak Cells	14	12.38%	--	--	14	11.66%
Short Circuit	3	2.65%	--	--	3	2.50%
Faulty Cable/Connectors	13	11.50%	1	14.28%	14	11.66%
Charger Malfunction	9	7.96%	--	--	9	7.50%
COMPONENT SUBTOTALS	113		7	TOTAL	120	

TABLE 6. (CONT.)

FAILURE CAUSE	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Battery Chargers						
Unknown	14	28.00%	--	--	14	22.95%
Personnel Operation	--	--	3	27.27%	3	4.91%
Extreme Environment	--	--	1	9.09%	1	1.63%
Mechanical Malfunction	2	4.00%	--	--	2	3.27%
Piece Part Failure	7	14.00%	2	18.18%	9	14.75%
Voltage Regulator Malfunction	7	14.00%	3	27.27%	10	16.39%
Current Limiter Malfunction	4	8.00%	--	--	4	6.55%
Current Controller Malfunction	2	4.00%	--	--	2	3.27%
Voltage Limiter Malfunction	2	4.00%	1	9.09%	3	4.91%
Thermal Overload Protection	2	4.00%	--	--	2	3.27%
Cooling Fan/Ventilation Malfunction	1	2.00%	--	--	1	1.63%
Charge Control Malfunction	2	4.00%	--	--	2	3.27%
Charge Control Timer Malfunction	1	2.00%	--	--	1	1.63%
Rectifier Problem	5	10.00%	--	--	5	8.19%
Faulty Cable/Connectors	1	2.00%	1	9.09%	2	3.27%
COMPONENT SUBTOTALS	50		11	TOTAL	61	

TABLE 7. SUMMARY OF BATTERY AND BATTERY CHARGER EVENTS BY COMPONENT AND FAILURE SUBCAUSE

FAILURE SUBCAUSE	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Batteries						
Personnel Operation	1	2.17%	--	--	1	2.13%
Personnel Maintenance	11	23.9%	1	100.00%	12	25.53%
Design/Fabrication/Construction/ Quality Control	7	15.22%	--	--	7	14.89%
Defective Procedures	3	6.52%	--	--	3	6.38%
Corrosion	3	6.52%	--	--	3	6.38%
Normal Wear/Natural End of Life	3	6.52%	--	--	3	6.38%
Electrical malfunction	1	2.17%	--	--	1	2.13%
Piece Part Failure	3	6.52%	--	--	3	6.38%
Low Specific Gravity	1	2.17%	--	--	1	2.13%
Stratification	1	2.17%	--	--	1	2.13%
Defective/Weak Cells	8	17.39%	--	--	8	17.02%
Electrolyte Dilution	3	6.52%	--	--	3	6.38%
Charger Malfunction	1	2.17%	--	--	1	2.13%
COMPONENT SUBTOTALS	46[a]		1	TOTAL	47[a]	

TABLE 7. (CONT.)

FAILURE SUBCAUSE	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Battery Chargers						
Personnel Operation	1	4.76%	2	66.67%	3	12.50%
Design/Fabrication/Construction/ Quality Control	2	9.52%	1	33.33%	3	12.50%
Extreme Environment	4	19.05%	--	--	4	16.67%
Normal Wear/Natural End of Life	2	9.52%	--	--	2	8.33%
Electrical Malfunction	1	4.76%	--	--	1	4.17%
Piece Part Failure	3	14.29%	--	--	3	12.50%
Current Limiter Malfunction	3	14.29%	--	--	3	12.50%
Current Controller Malfunction	1	4.76%	--	--	1	4.17%
Short Circuit	1	4.76%	--	--	1	4.17%
Faulty Cable/Connectors	3	14.29%	--	--	3	12.50%
COMPONENT SUBTOTALS	21[b]		3	TOTAL	24[b]	

a. 47 rather than 120 battery events are described in this table because no failure subcause was indicated in the LERs for the other 73 events.

b. 24 rather than 61 battery charger events are described in this table because no failure subcause was indicated in the LERs for the other 37 events.

TABLE 8. SUMMARY OF BATTERY AND BATTERY CHARGER EVENTS BY COMPONENT AND ACTIVITY RESULTING IN DISCOVERY

ACTIVITY	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Batteries						
Testing (Unspecified)	26	23.00%	--	--	26	21.66%
Normal Load Testing	4	3.53%	--	--	4	3.33%
Monthly Testing	22	19.46%	--	--	22	18.33%
Weekly Testing	8	7.07%	--	--	8	6.66%
Quarterly Testing	7	6.19%	--	--	7	5.83%
Refueling Testing	1	0.88%	--	--	1	0.83%
Maintenance	3	2.65%	2	28.57%	5	4.16%
Normal Plant Operation	32	28.31%	2	28.57%	34	28.33%
Unknown	10	8.84%	3	42.85%	13	10.83%
COMPONENT SUBTOTALS	113		7	TOTAL	120	
Battery Chargers						
Testing (Unspecified)	5	10.00%	2	18.18%	7	11.47%
Normal Load Testing	6	12.00%	--	--	6	9.83%
18 Month Testing	5	10.00%	--	--	5	8.19%
Maintenance	2	4.00%	1	9.09%	3	4.91%
Normal Plant Operation	29	48.00%	8	72.72%	37	60.65%
Unknown	3	6.00%	--	--	3	4.91%
COMPONENT SUBTOTALS	50		11	TOTAL	61	

TABLE 9. SUMMARY OF BATTERY AND BATTERY CHARGER EVENTS BY COMPONENT AND TYPE OF EVENT

TYPE OF EVENT	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Batteries						
Random	73	64.60%	--	--	73	60.83%
Common Cause	18	15.92%	--	--	18	15.00%
Recurring	22	19.46%	--	--	22	18.33%
Command Fault	--	--	1	14.28%	1	0.83%
Common Cause Command Fault	--	--	6	85.71%	6	5.00%
COMPONENT SUBTOTALS	113		7	TOTAL	120	
Battery Chargers						
Random	41	82.00%	--	--	41	67.21%
Common Cause	1	2.00%	--	--	1	1.63%
Recurring	8	16.00%	--	--	8	13.11%
Command Fault	--	--	5	45.45%	5	8.19%
Common Cause Command Fault	--	--	6	54.54%	6	9.83%
COMPONENT SUBTOTALS	50		11	TOTAL	61	

TABLE 10. SUMMARY OF BATTERY AND BATTERY CHARGER EVENTS BY COMPONENT AND EVENT CLASSIFICATION

EVENT CLASSIFICATION	FAILURES		COMMAND FAULTS		TOTALS	
	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	NUMBER OF EVENTS	PERCENTAGE OF COMPONENT SUBTOTAL	EVENTS	PERCENTAGE OF COMPONENT TOTAL
Batteries						
Frequency	40	35.39%	7	100.00%	47	39.16%
Age	11	9.73%	--	--	11	9.16%
Unknown	62	54.86%	--	--	62	51.66%
COMPONENT SUBTOTALS	113		7	TOTAL	120	
Battery Chargers						
Frequency	7	14.00%	8	72.72%	15	24.59%
Age	4	8.00%	--	--	4	6.55%
Unknown	39	78.00%	3	27.27%	42	68.85%
COMPONENT SUBTOTALS	50		11	TOTAL	61	

TABLE 11. CODES USED IN ONE-LINE DESCRIPTIONS

NSSS VENDOR

CODE	DESCRIPTION
B	BABCOCK & WILCOX
C	COMBUSTION ENGINEERING
W	WESTINGHOUSE
G	GENERAL ELECTRIC

EVENT CLASSIFICATION

CODE	DESCRIPTION
D	FREQUENCY
T	AGE
U	UNKNOWN

COMPONENT

CODE	DESCRIPTION
BA	BATTERY
BC	BATTERY CHARGER

FAILURE CAUSE

CODE	DESCRIPTION
00	UNKNOWN
01	PERSONNEL OPERATION
02	PERSONNEL MAINTENANCE
03	PERSONNEL TESTING
04	DESIGN/FABRICATION/CONSTRUCTION/QUALITY CONTROL
05	DEFECTIVE PROCEDURES
06	EXTREME ENVIRONMENT
08	CORROSION
10	NORMAL WEAR/NATURAL END OF LIFE
11	ELECTRICAL MALFUNCTION
12	MECHANICAL MALFUNCTION
13	PIECE PART FAILURE
14	LOW SPECIFIC GRAVITY
15	STRATIFICATION
16	HIGH ELECTROLYTE SOLUTION LEVEL
17	LOW ELECTROLYTE SOLUTION LEVEL
18	INSUFFICIENT CHARGE
20	DEFECTIVE/WEAK CELLS
21	VOLTAGE REGULATOR MALFUNCTION
22	CURRENT LIMITER MALFUNCTION
23	CURRENT CONTROLLER MALFUNCTION
24	VOLTAGE LIMITER MALFUNCTION
25	THERMAL OVERLOAD PROTECTION
26	COOLING FAN/VENTILATION MALFUNCTION
27	CHARGE CONTROL MALFUNCTION
28	CHARGE CONTROL TIMER MALFUNCTION
29	RECTIFIER PROBLEM
30	SHORT CIRCUIT
32	ELECTROLYTE DILUTION
33	FAULTY CABLE/CONNECTORS
34	CHARGER MALFUNCTION

FAILURE MODE

CODE	DESCRIPTION
A	REDUCED CAPABILITY
B	NO OUTPUT
C	UNKNOWN/UNSPECIFIED/OTHER
D	HIGH CURRENT/VOLTAGE OUTPUT
E	LOW OUTPUT VOLTAGE
G	HIGH AC RIPPLE ON DC OUTPUT
M	MAINTENANCE REPLACEMENT
T	TEST NOT PERFORMED

TYPE EVENT

CODE	DESCRIPTION
B	RECURRING COMMON CAUSE
C	COMMON CAUSE
R	RECURRING
S	COMMAND FAULT
T	RECURRING COMMAND FAULT
U	COMMON CAUSE COMMAND FAULT
V	RECURRING COMMON CAUSE COMMAND FAULT
BLANK	RANDOM

ACTIVITY RESULTING IN DISCOVERY

CODE	DESCRIPTION
A	TESTING(UNSPECIFIED)
B	NORMAL LOAD TESTING
C	MONTHLY TESTING
D	WEEKLY TESTING
E	QUARTERLY TESTING
F	REFUELING TESTING
G	18 MONTH TESTING
H	5 YEAR TESTING
M	MAINTENANCE
N	NORMAL PLANT OPERATION
R	RECORDS REVIEW
U	UNKNOWN

FLAGGING FIELD

CODE	DESCRIPTION
A	FAILED COMPONENT CAUSED AN ACCIDENT
B	COMPONENT FAILED TO MITIGATE AN ACCIDENT
C	SAFETY SIGNIFICANT
D	FAIL # NOT KNOWN
E	CELL # NOT KNOWN
F	FAIL # AND CELL # NOT KNOWN
N	FROM NSIC DATA BASE

TABLE II. (continued)

SYSTEM IDENTIFICATION CODES

CODE	DESCRIPTION
AM	AREA MONITOR SYSTEM
DB	EMERGENCY DIESEL GENERATOR
ES	ENGINEERED SAFETY FEATURE
FP	FIRE PROTECTION SYSTEM
FW	FEEDWATER SYSTEM
NM	NEUTRON MONITORING BATTERY
NN	UNKNOWN/UNSPECIFIED/OTHER
SA	AUTOMATIC (REACTOR) DEPRESSURIZATION (ADS)
SP	SPECIAL USE BATTERIES
ST	STATION BATTERIES/CHARGERS
SW	SERVICE WATER BUILDING BATTERIES/CHARGERS
SY	SWITCHYARD BATTERIES/CHARGERS
UP	UNINTERRUPTIBLE POWER SYSTEM (UPS)

REFERENCES

1. P. W. Baranowsky, A. M. Kolaczkowski, M. A. Fedele, A Probabilistic Safety Analysis of DC Power Supply Requirements for Nuclear Power Plants, NUREG-0666, April 1981.

2. Instructions for Preparation of Data Entry Sheets for Licensee Event Report (LER) File, NUREG-0161, July 1977.

APPENDIX A
DISCUSSION OF THE CAUSES OF VARIATIONS IN LER REPORTING

APPENDIX A
DISCUSSION OF THE CAUSES OF VARIATIONS IN LER REPORTING

There are generally two criteria used by the utilities to determine reporting requirements for failures; these are: (a) the technical specifications for each individual plant and (b) the LER reporting guide, Regulatory Guide 1.16.[A-1] The technical specifications for plants licensed prior to January 1, 1976, were independently written by individual plants without any planned uniformity among plants. All plants licensed after this date use standardized technical specifications, which helped to create more uniform reporting. Table A-1 shows those plants that have standard technical specifications. In addition to technical specification standardization, since 1976 there have been changes in the rules that govern LER reporting. These changed reporting rules, and the standardized technical specifications, are expected to result in more uniform LER reporting after January 1, 1976. But pre-1976 LER data, as well as LER data reported by plants which are not subject to standard technical specifications, will show considerable variation.

The above "mechanical" causes for LER reporting variations are explicable and expected. However, there are additional reporting variations. Differences in interpretation of the rules for submitting LER reports cause some variation. Also, variation is caused by the difficulty of determining the extent of safety and non-safety systems and therefore, by the questions of what failures are or are not required to be reported. Finally, variation can be caused by the degree of importance assigned to the LER reports by management of the individual utilities. We have seen variation in both the quantity and quality of LERs submitted by similar plants, where one would expect more uniform reporting. We have attributed these variations to the reasons given above.

The one thing that seems to have most hindered the development of uniform reporting is the lack of agreement about the purpose of an LER. Many people feel that LERs are intended to highlight problem areas within

the safety systems. Some feel that the LERs ought to be used to highlight generic problem areas. Many of these same people do not feel that these uses are compatible with the need to determine failure rate information.

These differing viewpoints may confuse the individual responsible for reporting events. Hence, we have the variations in the quality and quantity of LERs received by the Nuclear Regulatory Commission. For further discussion of the causes of variations in LER reporting, see Reference A-2.

TABLE A-1. FACILITY OPERATING LICENSES ISSUED WITH STANDARD TECHNICAL SPECIFICATIONS

Facility	Vendor	Issue Date
Crystal River Unit 3	B	December 3, 1976
Davis-Besse Unit 1	B	April 22, 1977
Three Mile Island Unit 2	B	February 8, 1978
Arkansas Unit 2	C	July 18, 1978
Calvert Cliffs Unit 1 (STS Conversion)	C	February 11, 1977
Calvert Cliffs Unit 2	C	August 13, 1976
Millstone Unit 2	C	August 1, 1975
St. Lucie Unit 1	C	March 1, 1976
Beaver Valley Unit 1	W	January 30, 1976
D. C. Cook Unit 1	W	October 25, 1974
D. C. Cook Unit 2	W	December 23, 1977
Joseph Farley Unit 1	W	June 25, 1977
Joseph Farley Unit 2	W	March 31, 1981
McGuire Unit 1	W	July 8, 1981
North Anna Unit 1	W	November 21, 1977
North Anna Unit 2	W	August 21, 1980
Salem Unit 1	W	August 13, 1976
Salem Unit 2	W	May 20, 1981
Sequoyah Unit 1	W	September 17, 1980
Sequoyah Unit 2	W	September 15, 1981
Trojan	W	November 21, 1975
Yankee Rowe (STS Retrofit)	W	January 1, 1977
Brunswick Unit 1	G	September 8, 1976
Brunswick Unit 2 (STS Conversion)	G	November 23, 1977
Hatch Unit 2	G	June 13, 1978

REFERENCES

A-1. "Reporting of Operating Information--Appendix A Technical Specifications," U.S. Nuclear Regulatory Commission Regulatory Guide 1.16, Revision 4, August 1975.

A-2. Gerald L. Boner and Harvey W. Hanners, Enhancement of Onsite Emergency Diesel Generator Reliability, University of Dayton Research Institute, NUREG/CR-0660, 1979, pp. I-4,5, IV-5,6, V-10, and V-13.

APPENDIX B
GENERAL PLANT INFORMATION

TABLE B-1. GENERAL PLANT INFORMATION

BABCOCK & WILCOX

Plant Code	Plant Name (Docket Number)	Design Electrical Rating (MWe)	Criticality Date	Date of Commercial Operation	Location (State)	Architect/Engineer	Constructor
AR1	Arkansas Nuclear One 1 (50-313)	850	08/06/74	12/19/74	AR	Bechtel	Bechtel
CR3	Crystal River 3 (50-302)	825	01/14/77	03/13/77	FL	Gilbert Associates	J. A. Jones Construction
DB1	Davis-Besse 1 (50-346)	906	08/12/77	07/31/78	OH	Bechtel	Bechtel
OE1	Oconee 1 (50-269)	887	04/19/73	07/15/73	SC	Duke & Bechtel	Duke Power
OE2	Oconee 2 (50-270)	887	11/11/73	09/09/74	SC	Duke & Bechtel	Duke Power
OE3	Oconee 3 (50-287)	887	09/05/74	12/16/74	SC	Duke & Bechtel	Duke Power
RS1	Rancho Seco (50-312)	918	09/16/74	04/17/75	CA	Bechtel	Bechtel
TI1	Three Mile Island 1[a] (50-289)	819	06/05/74	09/02/74	PA	Gilbert Associates	United Engineers & Constructors
TI2	Three Mile Island 2[a] (50-320)	906	03/28/78	12/30/78	PA	Burns & Roe	United Engineers & Constructors

TABLE B-1. (Continued)

COMBUSTION ENGINEERING

Plant Code	Plant Name (Docket Number)	Design Electrical Rating (MWe)	Criticality Date	Date of Commercial Operation	Location (State)	Architect/Engineer	Constructor
AR2	Arkansas Nuclear One 2 (50-368)	912	12/05/78	03/26/80	AR	Bechtel	Bechtel
CC1	Calvert Cliffs 1 (50-317)	845	10/07/74	05/08/75	MD	Bechtel	Bechtel
CC2	Calvert Cliffs 2 (50-318)	845	11/30/76	04/01/77	MD	Bechtel	Bechtel
FC1	Fort Calhoun (50-285)	478	08/06/73	06/20/74	NB	Gibbs, Hill, Durham & Richardson	Gibbs, Hill, Durham & Richardson
MI2	Millstone 2 (50-336)	870	10/17/75	12/16/75	CT	Bechtel	Bechtel
MY1	Maine Yankee (50-309)	825	10/23/72	12/28/72	ME	Stone & Webster	Stone & Webster
PA1	Palisades (50-255)	805	05/24/71	12/31/71	MI	Bechtel	Bechtel
SL1	St. Lucie (50-335)	802	04/22/76	12/21/76	FL	Ebasco	Ebasco

TABLE B-1. (Continued)

WESTINGHOUSE

Plant Code	Plant Name (Docket Number)	Design Electrical Rating (MWe)	Criticality Date	Date of Commercial Operation	Location (State)	Architect/Engineer	Constructor
BV1	Beaver Valley 1 (50-334)	852	05/10/76	10/01/76	PA	Stone & Webster	Stone & Webster
DC1	Donald C. Cook 1 (50-315)	1054	01/18/75	08/27/75	MI	American Electrical Power Service Corporation	American Electrical Power Service Corporation
DC2	Donald C. Cook 2 (50-316)	1100	03/10/78	07/01/78	MI	American Electrical Power Service Corporation	J. A. Jones Construction
HN1	Haddam Neck (50-213)	582	07/24/67	01/01/68	CT	Stone & Webster	Stone & Webster
IP2	Indian Point 2 (50-247)	873	05/22/73	08/01/74	NY	United Engineers & Constructors	Westinghouse Development Corp.
IP3	Indian Point 3 (50-286)	965	04/06/76	08/30/76	NY	United Engineers & Constructors	Westinghouse Development Corp.
JF1	Joseph M. Farley 1 (50-348)	829	08/09/77	12/01/77	AL	Southern Services, Inc.	Bechtel
JF2	Joseph M. Farley 2 (50-364)	829	05/05/81	07/30/81	AL	Southern Services, Inc.	Bechtel
KE1	Kewaunee (50-305)	535	03/07/74	06/16/74	WI	Pioneer Services & Engineering	Pioneer Services & Engineering
MG1	McGuire 1 (50-369)	1180	09/08/81	12/01/81	NC	Duke Power	Duke Power
NA1	North Anna 1 (50-338)	907	04/05/78	06/06/78	VA	Stone & Webster	Stone & Webster
NA2	North Anna 2 (50-339)	907	06/12/80	12/14/80	VA	Stone & Webster	Stone & Webster
PR1	Prairie Island 1 (50-282)	530	12/01/73	12/16/73	MN	Fluor Pioneer, Inc.	Northern States Power Company
PR2	Prairie Island 2 (50-306)	530	12/17/74	12/21/74	MN	Fluor Pioneer, Inc.	Northern States Power Company
PT1	Point Beach 1 (50-266)	497	11/02/70	12/21/70	WI	Bechtel	Bechtel

TABLE B-1. (Continued)

WESTINGHOUSE (Continued)

Plant Code	Plant Name (Docket Number)	Design Electrical Rating (MWe)	Criticality Date	Date of Commercial Operation	Location (State)	Architect/Engineer	Constructor
PT2	Point Beach 2 (50-301)	497	05/30/72	10/01/72	WI	Bechtel	Bechtel
RG1	Robert E. Ginna (50-244)	470	11/08/69	06/01/70	NY	Gilbert Associates	Bechtel
RO2	H. B. Robinson 2 (50-261)	700	09/20/70	03/07/71	SC	Ebasco	Ebasco
SA1	Salem 1 (50-272)	1090	12/11/76	06/30/77	NJ	Public Services & Gas Co.	United Engineers & Constructors
SA2	Salem 2 (50-311)	1115	08/08/80	10/13/81	NJ	Public Services & Gas Co.	United Engineers & Constructors
SE1	Sequoyah 1 (50-327)	1128	07/05/80	07/01/81	TN	Tennessee Valley Authority	Tennessee Valley Authority
SE2	Sequoyah 2 (50-328)	1148	11/05/81	NA	TN	Tennessee Valley Authority	Tennessee Valley Authority
SO1	San Onofre 1 (50-206)	436	06/14/67	01/01/68	CA	Bechtel	Bechtel
SU1	Surry 1 (50-280)	788	07/01/72	12/22/72	VA	Stone & Webster	Stone & Webster
SU2	Surry 2 (50-281)	788	03/07/73	05/01/73	VA	Stone & Webster	Stone & Webster
TR1	Trojan (50-344)	1130	12/15/75	05/20/76	OR	Bechtel	Bechtel
TU3	Turkey Point 3 (50-250)	693	10/20/72	12/14/72	FL	Bechtel	Bechtel
TU4	Turkey Point 4 (50-251)	693	06/11/73	09/07/73	FL	Bechtel	Bechtel
YR1	Yankee Rowe (50-029)	175	08/19/60	07/01/61	MA	Stone & Webster	Stone & Webster
ZI1	Zion 1 (50-295)	1040	06/19/73	12/31/73	IL	Sargent & Lundy	Commonwealth Edison
ZI2	Zion 2 (50-304)	1040	12/24/73	09/17/74	IL	Sargent & Lundy	Commonwealth Edison

TABLE B-1. (Continued)

GENERAL ELECTRIC

Plant Code	Plant Name (Docket Number)	Design Electrical Rating (MWe)	Criticality Date	Date of Commercial Operation	Location (State)	Architect/Engineer	Constructor
BF1	Browns Ferry 1 (50-259)	1065	08/17/73	03/01/74	AL	Tennessee Valley Authority	Tennessee Valley Authority
BF2	Browns Ferry 2 (50-260)	1065	07/20/74	03/01/75	AL	Tennessee Valley Authority	Tennessee Valley Authority
BF3	Browns Ferry 3 (50-296)	1065	08/08/76	03/01/77	AL	Tennessee Valley Authority	Tennessee Valley Authority
BP1	Big Rock Point (50-155)	72	09/27/62	03/29/63	MI	Bechtel	Bechtel
BR1	Brunswick 1 (50-325)	821	10/08/76	03/18/77	NC	United Engineers & Constructors	Brown & Root
BR2	Brunswick 2 (50-324)	821	03/20/75	11/03/75	NC	United Engineers & Constructors	Brown & Root
CO1	Cooper Station (50-298)	778	02/21/74	07/07/74	NB	Burns & Roe	Burns & Roe
DA1	Duane Arnold (50-331)	538	03/23/74	02/01/75	IA	Bechtel	Bechtel
DR1	Dresden 1[b] (50-010)	200	10/15/59	07/04/60	IL	Bechtel	Bechtel
DR2	Dresden 2 (50-237)	794	01/07/70	06/09/70	IL	Sargent & Lundy	United Engineers & Constructors
DR3	Dresden 3 (50-249)	794	01/31/71	11/16/71	IL	Sargent & Lundy	United Engineers & Constructors
EN1	Edwin I. Hatch 1 (50-321)	777	09/12/74	12/31/75	GA	Bechtel	Georgia Power Co.
EN2	Edwin I. Hatch 2 (50-366)	784	07/04/78	09/05/79	GA	Bechtel	Georgia Power Co.
FP1	James A. Fitzpatrick (50-333)	821	11/17/74	07/28/75	NY	Stone & Webster	Stone & Webster
MI1	Millstone 1 (50-245)	660	10/26/70	03/01/71	CT	Ebasco	Ebasco

TABLE B-1. (Continued)

GENERAL ELECTRIC

Plant Code	Plant Name (Docket Number)	Design Electrical Rating (MWe)	Criticality Date	Date of Commercial Operation	Location (State)	Architect/Engineer	Constructor
MO1	Monticello (50-263)	545	12/10/70	06/30/71	MN	Bechtel	Bechtel
NM1	Nine Mile Point 1 (50-220)	620	09/05/69	12/01/69	NY	Niagara Mohawk Power Corporation	Stone & Webster
OC1	Oyster Creek 1 (50-219)	650	05/03/69	12/01/69	NJ	Burns & Roe	Burns & Roe
PB2	Peach Bottom 2 (50-277)	1065	09/16/73	07/05/74	PA	Bechtel	Bechtel
PB3	Peach Bottom 3 (50-278)	1065	08/07/74	12/23/74	PA	Bechtel	Bechtel
PI1	Pilgrim 1 (50-293)	655	06/16/72	12/01/72	MA	Bechtel	Bechtel
QC1	Quad-Cities 1 (50-254)	789	10/18/71	02/18/73	IL	Sargent & Lundy	United Engineers & Constructors
QC2	Quad-Cities 2 (50-265)	789	04/26/72	03/10/73	IL	Sargent & Lundy	United Engineers & Constructors
VY1	Vermont Yankee (50-271)	514	03/24/72	11/30/72	VT	Ebasco	Ebasco

a. Plant shutdown since 03/28/79.

b. Plant shutdown since 10/31/79.

APPENDIX C

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY NSSS VENDOR

CODES USED IN LER ONE-LINE DESCRIPTIONS

NSSS VENDOR

CODE	DESCRIPTION
B	BABCOCK & WILCOX
C	COMBUSTION ENGINEERING
W	WESTINGHOUSE
G	GENERAL ELECTRIC

EVENT CLASSIFICATION

CODE	DESCRIPTION
D	FREQUENCY
T	AGE
U	UNKNOWN

COMPONENT

CODE	DESCRIPTION
BA	BATTERY
BC	BATTERY CHARGER

FAILURE CAUSE

CODE	DESCRIPTION
00	UNKNOWN
01	PERSONNEL OPERATION
02	PERSONNEL MAINTENANCE
03	PERSONNEL TESTING
04	DESIGN/FABRICATION/CONSTRUCTION/QUALITY CONTROL
05	DEFECTIVE PROCEDURES
06	EXTREME ENVIRONMENT
08	CORROSION
10	NORMAL WEAR/NATURAL END OF LIFE
11	ELECTRICAL MALFUNCTION
12	MECHANICAL MALFUNCTION
13	PIECE PART FAILURE
14	LOW SPECIFIC GRAVITY
15	STRATIFICATION
16	HIGH ELECTROLYTE SOLUTION LEVEL
17	LOW ELECTROLYTE SOLUTION LEVEL
18	INSUFFICIENT CHARGE
20	DEFECTIVE/WEAK CELLS
21	VOLTAGE REGULATOR MALFUNCTION
22	CURRENT LIMITER MALFUNCTION
23	CURRENT CONTROLLER MALFUNCTION
24	VOLTAGE LIMITER MALFUNCTION
25	THERMAL OVERLOAD PROTECTION
26	COOLING FAN/VENTILATION MALFUNCTION
27	CHARGE CONTROL MALFUNCTION
28	CHARGE CONTROL TIMER MALFUNCTION
29	RECTIFIER PROBLEM
30	SHORT CIRCUIT
32	ELECTROLYTE DILUTION
33	FAULTY CABLE/CONNECTORS
34	CHARGER MALFUNCTION

FAILURE MODE

CODE	DESCRIPTION
A	REDUCED CAPABILITY
B	NO OUTPUT
C	UNKNOWN/UNSPECIFIED/OTHER
D	HIGH CURRENT/VOLTAGE OUTPUT
E	LOW OUTPUT VOLTAGE
G	HIGH AC RIPPLE ON DC OUTPUT
M	MAINTENANCE REPLACEMENT
T	TEST NOT PERFORMED

TYPE EVENT

CODE	DESCRIPTION
B	RECURRING COMMON CAUSE
C	COMMON CAUSE
R	RECURRING
S	COMMAND FAULT
T	RECURRING COMMAND FAULT
U	COMMON CAUSE COMMAND FAULT
V	RECURRING COMMON CAUSE COMMAND FAULT
BLANK	RANDOM

ACTIVITY RESULTING IN DISCOVERY

CODE	DESCRIPTION
A	TESTING(UNSPECIFIED)
B	NORMAL LOAD TESTING
C	MONTHLY TESTING
D	WEEKLY TESTING
E	QUARTERLY TESTING
F	REFUELING TESTING
G	18 MONTH TESTING
H	5 YEAR TESTING
M	MAINTENANCE
N	NORMAL PLANT OPERATION
R	RECORDS REVIEW
U	UNKNOWN

FLAGGING FIELD

CODE	DESCRIPTION
A	FAILED COMPONENT CAUSED AN ACCIDENT
B	COMPONENT FAILED TO MITIGATE AN ACCIDENT
C	SAFETY SIGNIFICANT
D	FAIL # NOT KNOWN
E	CELL # NOT KNOWN
F	FAIL # AND CELL # NOT KNOWN
N	FROM NSIC DATA BASE

SYSTEM IDENTIFICATION CODES

CODE	DESCRIPTION
AM	AREA MONITOR SYSTEM
DB	EMERGENCY DIESEL GENERATOR
ES	ENGINEERED SAFETY FEATURE
FP	FIRE PROTECTION SYSTEM
FW	FEEDWATER SYSTEM
NM	NEUTRON MONITORING BATTERY
NN	UNKNOWN/UNSPECIFIED/OTHER
SA	AUTOMATIC (REACTOR) DEPRESSURIZATION (ADS)
SP	SPECIAL USE BATTERIES
ST	STATION BATTERIES/CHARGERS
SW	SERVICE WATER BUILDING BATTERIES/CHARGERS
SY	SWITCHYARD BATTERIES/CHARGERS
UP	UNINTERRUPTIBLE POWER SYSTEM (UPS)

ONE LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY NSSS VENDOR

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
B	CR3	017166A	011277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166B	020277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166C	020977	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	021185	040578	BA	NN	T02	R	V	D		WRONG BTTRY CELLS MONITORED FOR WEEKLY BATT SURV	PERSONNEL NOT FOLLOWING PROCEDURES
B	CR3	034100	071481	BA	ST	B3002	N	C	D		STATION BATTERY SHORTED DURING MAINTENANCE	PERSONNEL ERROR. CAUSED REAC'OR TRIP
B	DB1	020448	011978	BA	ST	A1415	E		U		1N BTTRY CELL 32 ELECTROLYTE S.G. DECRS .003 OOT	ELEC. STRAT. DUE TO LO BTTRY LOADING
B	DB1	021587	042778	BA	FP	A17	N		U		4 CELLS OF ENGINE BTTRY W/ ELECTROLYTE BELOW PLATE	ELEC. ADDED BROUGHT CELLS UP TO NORMAL
B	DB1	022362	090578	BA	ST	T02	R	U	D		STATION BATTERIES WKLY SURV TEST NOT DONE ON TIME	MISUNDERSTANDING BTWN PERSONNEL
B	DB1	025397	020879	BA	FP	A17	D		U		ELECTROL LEVEL IN 4 CELLS FOUND LO IN DSL ENG STA-	-RTING BTTRY. DIESEL STILL STARTED
B	DE3	015532	081876	BA	NN	T05	R	U	D		125-VDC INSTR & CNTRL BATTERIES NOT LOAD TESTED	DFCTV PROC: WRONG DATA IN SURV PRINTOUT
B	DE3	022183	072778	BA	NN	B33	B		U		SMOKE FROM 1 TERMINAL OF I&C BATTERY 3CB.	TERMINAL DFCTV/CNNCTNS FOUND DEFECTIVE
B	TI2	023084*	111278	BC	NN	B13	B		U	2	CHRGRS 2-2A/B FUSE BLEW NO CHRGR FOR BANK 2-2SB	DEFECTIVE GATING FILTER MODULES
C	AR2	026489	052279	BA	ST	T03	R	U	D		SURVEILLANCE NOT PERFORMED ON STATION BATTERIES	PERSONNEL OVERSIGHT
C	AR2	026904	080579	BC	NN	B1306	N	C	D		BATTERY CHARGER 2D31 FAILED. DC OUTPUT LAMP SOCK-	-ET BURNED UP DUE TO HIGH HEAT,VOLT.DIST
C	AR2	027808	121179	BC	NN	B21	N	S	D		BATTERY CHARGER 2D32 AC BREAKER TRIPPED	CURRENT SURGED WHEN SHIFTING TO FLOAT
C	AR2	039245*	110581	BC	NN	B00	N		U	2	OUTPUT BREAKER OF BATTERY CHARGER 2D34 TRIPPED OP-	-EN TWICE. NO CAUSE COULD BE FOUND
C	CC1	021533	050378	BA	NN	A00	A		U		125 VDC BTTRY 22 CELL 54 ICV BELOW MIN VOLTAGE	CAUSE UNKNOWN
C	CC1	037262	050681	BA	NN	M20	A		U		VOLT OF CELL 18 OF 125 VDC BATTERY 12 FOUND .08V -	-BELOW MINIMUM. FULL CAPACITY AVAILABLE
C	CC2	017344	021777	BA	NN	B01	N	S	D		#11 125 VDC BATTERY INADVERTENTLY TAKEN OUT OF SE-	-RVICE. SUPERVISOR GAVE PERMISSION
C	MI2	026979	080379	BA	NN	M20	A		U		VARIOUS CELLS REPLACED IN 2D1B BTTRY (4 CELLS)	REDUCTION IN CELL VOLT. FULL CAPACITY
C	PA1	016178	102076	BC	NN	E2201	N		D		DC BUS-2 VOLTG FELL;VOLTG ON ASSOC AC BUSES FELL	CURR LMTR & OUTPUT BRKR SETTING ERRONEOUS
C	PA1	025917	040479	BA	ST	B2005	A	C	D		2 CELLS IN STATION BATTERY #2 BURST WHILE TAKING -	-VOLTAGE READINGS. FULL CAPACITY AVAI
C	PA1	036000*	010681	BA	ST	B02	U	U	D	2	OUTPUT BREAKER FOR BOTH STATION BATTERIES WERE OP-	-ENED FOR 1 HOUR. PERSONNEL ERROR
C	SL1	020069	121677	BC	NN	B00	N		D		OUTPUT LOST FROM "AB" BATTERY CHARGER	POWER SUPPLY BKR TRIPPED FOR NO REASON
C	SL1	037962	062481	BC	NN	T02	R	U	D		SURVEILLANCE REQUIREMENTS NOT MET ON "AB" BATTERY-	-CHARGER. MISINTERPRETATION OF TECH SPEC
C	SL1	038775	091081	BC	NN	B24	A	R	U		1A BATTERY CHARGER SHUTDOWN ON HIGH VOLTAGE	HIGH VOLTAGE DEVICE FOUND DEFECTIVE
W	BV1	016357	102476	BA	NN	M00	A		U		VOLTAGE DECREASED IN CELL 48 BY MORE THAN 0.05V	UNKNOWN. CELL 48 FROM BTTRY 3, 1650 A.H.
W	BV1	017119A	020477	BA	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON #3 & #4 STATIO-	-N BATTERIES. PERSONNEL ERROR
W	BV1	017119B	020477	BC	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON CHARGERS ASSOC-	-IATED WITH #3 & #4 STATION BTTRY. PERSON
W	BV1	021043	032078	BC	NN	E2713	N		U		DECR #4 DC BUS VOLTAGE DUE TO A FAULTY BTTRY CHRGR	FAILD COLLECTR RESISTR IN CHRGR CNTRL CKT
W	BV1	022136	080478	BC	ST	B00	B		U		#4 STATION BTTRY CHRGR OUTPUT BRKR TRIPPED	IMPROPR OP OF CKTBRK.CAUSE OF TRP UNKNOWN
W	BV1	028147	092179	BA	NN	M2C10	A		T		CELL #6 OF BATTERY NO. 1 COULD NOT HOLD ORIGINAL -	-VOLTAGE. FULL BATTERY CAPACITY AVAIL.

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY NSSS VENDOR

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	BV1	037757	061581	BC	NN	B2506	N	R	D		#2 BATTERY CHARGER OUTPUT BREAKER FAILED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAD
W	BV1	038347	080581	BC	NN	B2506	N	R	D		#2 BATTERY CHARGER OUTPUT BREAKER TRIPPED OPE	EXCESSIVE HEAT CAUSED THERMAL OVERLOAD
W	BV1	038825	091081	BC	ST	B33	N		U		#4 STATION BATTERY CHARGER TAKEN OUT OF SERVICE	BAD ELECTRICAL CONNECTION IN OUTPUT
W	BV1	039154	101781	BA	NN	M20	E	R	U		2 OF 60 CELLS VOLTAGE FOUND DROPPED BY .05 VDC	NO CAUSE GIVEN, BATTRY HAD FULL CAPACITY
W	DC1	025643	032379	BC	NN	D01	N	U	D		125 VDC EQUALIZING CHARGE TOO HIGH, FAILED INVERT-	-ER, CAUSED SCRAM AND SI. NO CAUSE
W	DC2	021633	060778	BA	NN	A14	A		U		CD PLANT BTTRY CELL 89 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	DC2	021632	061578	BA	NN	A14	A		U		AB PLANT BTTRY CELL 35 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	DC2	039127	101981	BA	NN	T05	R	U	D		SURVEILLANCE NOT PERFORMED ON "N" TRAIN BATTERY	PROCEDURE LACKED SIGNOFF
W	HN1	014608A	042576	BC	NN	D2833	N		U		BTTRY CHARGER A WENT INTO OVERCHARGE	FAULTY CNTCT ON CHARGER CONTROL TIMER
W	HN1	014608B	042576	BC	NN	D2122	N		U		VOLTG REG SPIKING TO 200 AMPS THEN SHUTTING OFF	FAULTY PHASING CRD IN CURRENT LIMITER CKT
W	IP3	014709	051076	BC	NN	B2630	A		U		BTTRY CHRGR TROUBLE ALARMED CHARGER FAN HAD TRPD	AC FAN MTR INOP EXPOSED WIRE BLEW A FUSE
W	IP3	015138	060876	BC	NN	B13	A	S	U		# 31 BTTRY CHRGR AC BRKR TRIPD BATT CHRGR INOP	PRESSURE SENSOR FAILED TRIPPING BREAKER
W	IP3	036207	012481	BC	NN	B2123	N		U		OUTPUT FROM CHARGER #32 DISCOVERED DROPPING	VOLTAGE AND CURRENT CONTROLLER REPLACED
W	IP3	038257	070681	BC	NN	B13	N	S	U		BATTERY CHARGER #32 DISCOVERED TRIPPED	FAILED DP AIR FLOW SENSOR SWITCH
W	JF1	021235A	041878	BA	SW	B00	E		U		2 CELLS IN SW BLDG "A" BATT BANK 1 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	JF1	021235B	041878	BA	SW	B00	E		U		2 CELLS IN SW BLDG B BATT BANK 2 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	JF1	027181	090679	BA	NN	T03	R	U	D		QUARTERLY AUXILIARY BUILDING BATTERY VERIFICATION-	-NOT PERFORMED ON TIME. PERSONNEL
W	JF1	032332A	081280	BA	SW	A14	A	R	U		SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	BATT PLACED ON EQUALIZE & S.G. ACCEPTABLE
W	JF1	032332B	082580	BA	SW	A14	A	R	U		SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	NO EXTERNAL CAUSE FOR LOW SPECIFIC GRAV
W	JF1	032504	082580	BC	SW	B24	N	S	U		SW B DC DISTRIBUTION SYS INOP NO OUTPUT FROM BATT-	-CHRGR 4. HV S/D RELAY ACTUATED
W	JF1	032687	091180	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LO BATT CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033007	102180	BA	SW	A1404	A		D		SW "A" BTTRY SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033163	102880	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM PROX/ACID RES/POST SEAL DESIGN
W	MG1	039186	101981	BA	ST	A3308	N		T		CELL TO CELL RESISTANCE IN 3 CELLS FOUND HIGH	CORROSION OF TERMINAL CONNECTIONS
W	NA1	026545	062879	BA	DB	T05	R	U	D		7 DAY SURVEILLANCE OF EMERGENCY DIESEL GENERATOR -	-BATTERIES EXCEEDED INTERVAL. PROCEDURAL
W	NA1	026656	073179	BA	DB	T05	R	U	D		DIESEL GENERATOR BATTERIES SURVEILLANCE NOT DONE	TIME LAG IN IMPLEMENTING NEW PROCEDURES
W	NA1	036491A	022881	BA	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	NA1	036491B	022881	BC	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	NA1	171672	120181	BA	DB	A1410	A		T		1J EMERGENCY D/G INOP CELL S.G. BELOW 1.2	D/G BATTERY NEAR END OF USEFUL LIFE
W	NA2	036466*	021881	BA	DB	M14	E		U	2	BATTERIES FOR 2J & 2H DIESEL GENERATORS FAILED SU-	-RVEILLANCE TEST. 4 CELLS REPLACED
W	NA2	036417	022081	BA	DB	T05	R	U	D		DATA FROM TWO TESTS ON 2J DIESEL BATTERY FOUND NO-	-T USABLE. NOT COMPARED WITH INITIAL CON
W	PP1	026268	053179	BA	FP	T05	R	U	D		DIESEL DRIVEN WEEKLY BATTERY INSPECTION NOT DONE	PROCEDURES WERE DEFECTIVE

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY NSSS VENDOR

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	PR1	030917	033180	BA	ST	T02	R	U	D		INDIVIDUAL FLOAT CELL VOLT MEAS NOT DONE IN STATI-	-ON BATTERY TEST. PERSONNEL OVERSIGHT
W	PR1	033222	110580	BC	NN	A2911	A		U		#12 BITRY CHRGR FAILD TO PROVIDE NORMAL OUTPUT	FIRING CARD B NOT PROVIDING PULSE TO SCR
W	PR2	014599	041476	BC	NN	B2133	B		U		#12 BATTERY CHARGER FAILED DISABLED "B" DC POWER	VOLTAGE CNTRL CRD LOOSE IN ITS SOCKET
W	PR2	015515	071076	BA	NN	B02	M		D		BATTERY B LEADS WERE REMOVED RENDERING BATT INOP	PERS FAILED TO COMPLY W/ T.S. 3.7
W	PR2	021898	071678	BA	ST	B3311	N		D		PLASTIC TOP OF 2 STAIN MAM BATT CELLS ON FIRE	RESISTNC HEATG OF STRAP-CELL TERMINAL
W	SA1	020738A	020178	BA	NN	A34	N		U		1C 125V BATTERY VOLTAGE LOW	1C1,1C2 BATT CHARGER D.C. BRKRS TRPD
W	SA1	020738B	020178	BC	NN	B00	N		U	2	1C1,1C2 BATT CHARGER D.C. BRKRS TRIPPED	UNKNOWN CAUSE
W	SA1	032162	072180	BA	FP	T02	R	U	D		92 DAY & 18 MON SURV NOT DONE ON 24 V STARTG BATT	ELECTRICIAN NOT COMPLETING JOB
W	SA1	038834	091881	BA	FP	B33	N		U		BATTERY CABLE CLAMP FOUND ARCING AND CRACKED	CLAMP WAS REPLACED ON #2 FIRE PUMP BTTRY
W	SA2	038319	072481	BC	NN	B2101	N	U	D		2C1 BATTERY CHARGER DISCOVERED TRIPPED. VOLTAGE -	-SETTING WAS INCORRECTLY SET
W	SA2	038327	081281	BC	NN	B24	N		U		281 BATTERY CHARGER WOULD NOT PICK UP 28 VDC LOAD	HIGH VOLTAGE CUT-OUT ACTUATED
W	SA2	038683	090681	BA	AM	B00	N		U		RAD MONITOR 2R12A BATTERY PACK FAILED	NO CAUSE GIVEN
W	SE1	032338	080780	BA	DB	B30	N		U		D/G BTTRY 18-B CELL 51 SHORTED AND FAILED	NO CAUSE GIVEN
W	SE1	032342A	081280	BA	DB	B05	U		D		D/G BTTRY 18-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	SE1	032342B	081380	BA	DB	B05	U		D		D/G BTTRY 18-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	SU2	169141	081981	BC	FP	B13	N		U		SMOKE DET SYS INOP BTTRY CHRGR LOST POWER	FAULTY POWER SUPPLY CARD IN CHARGER
W	SU2	038470	090681	BA	FP	B00	U		U		SOMKE DETECTOR BATERY FOUND NOT TO TAKE A CHARGE	NO CAUSE GIVEN
W	SU2	038936A	100181	BA	FP	B34	A		D		SMOKE DETECTOR BATTERY FAILED	CHARGER NOT CHARGING BATTERY
W	SU2	038936B	100181	BC	FP	B00	A		U		BATTERY CHARGER FOR SMOKE DETECTOR BATTERY FAILED	NO CAUSE GIVEN
W	TP1	014563	032476	BA	ES	T05	R	U	D		ESF DC PWR SUPPLIES SURV REQ PERFORMD AT WRNG FREQ	PROCEDURE DID NOT USE FREQ REQ BY T.S.
W	TP1	020885	031778	BA	NN	T02	R	U	D		125 VDC ELECTRICAL SYS OP NOT VERIFIED WK OF 2-26	MAINT PERS FAILD TO INSURE SURV COMPLETED
W	TP1	025211A	011979	BA	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TP1	025211B	011979	BC	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TP1	032627	090380	BA	FW	B20	N		U		DIESEL-DRIVEN AFWP FAILD TO START FROM MANUAL SIG	FAILED STARTING BATTERY
W	TU3	022061A	122277	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	TU3	022061B	122977	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	TU3	033530A	121180	BC	NN	C00	N		U		PROBLEMS WITH 4B 125 VDC BATTERY CHARGER	NO CAUSE GIVEN
W	TU3	033530B	121180	BA	NN	T34	N	U	T		4B 125 VDC BATT OOS,TECH SPEC EXCEEDED	PROBLEM W/ ASSOCIATED BTTRY CHARGER
W	TU3	039363	111281	BA	NN	B20	A	R	U		"3A" 125 VDC FAILED TO HOLD A CHARGE	BEING EVALUATED W/ MANUFACTURER
W	YR1	019476A	101477	BC	NN	B1210	N	R	T		NO. 2 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING
W	YR1	019476B	101477	BC	NN	T01	N	U	D		NO. 1 BATTERY CHARGER CROSS TIED TO NO. 2 BATTERY	OVERSIGHT CAUSE LCO STATED IN TECH SPEC
W	YR1	019640	110577	BC	NN	B1210	N	R	T		NO. 1 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING DUE TO NORMAL WEAR

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY NSSS VENDOR

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	YR1	019861	120577	BA	ST	A20	E		U		CELL VOLTAGE ON CELL 18 OF BANK 1 FOUND LOW	NO CAUSE FOUND,CELL REPLACED
W	ZI1	1711284	121281	BA	NN	B01	M	U	D		UNIT 2 212 BATTERY TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
W	ZI1	1711288	121281	BC	NN	B01	M	U	D		UNIT 2 212 CHARGER TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
W	ZI1	172130	121581	BA	NN	C05	U	U	U		EQUALIZING CHARGE NOT PLACED ON BATTERY 112	PROCEDURE NOT CLEAR ON COMMUNICATIONS
G	BF1	038085	072281	BA	NN	A20	U		U		250 VOLT MAIN BATTERY TAKEN OOS TO BYPASS A CRACK-	-ED CELL.
G	BF2	015394	070976	BA	NM	B3302	M	U	D		NEUTRON MONITORING BATTERY ZA MADE INOPERABLE	CONCIR BROKEN OFF A CELL POST PERS ERROR
G	BF2	025671	041979	BA	SP	B3302	N	C	D		BROKEN TERMINAL DISCOVERED ON S/G BOARD "D" BTTRY	PERSONNEL ERROR. ALSO AFFECTED UNIT 1
G	BP1	015248A	063076	BC	ST	B29	N		U		STATION BATTERY CHARGER FAILED	DEFECTIVE SILICON RECTIFIERS
G	BP1	015248B	063076	BA	ST	A18	N		D		LOAD ON BTTRY REDUCED VOLTAGE & SPECIFIC GRAVITY	STATION BATTERY CHARGER HAD FAILED
G	BP1	015326A	072276	BA	SA	A17	C		U		RDS BATTERY D PILOT CELL LOW ELECTROLYTE LEVEL	EXACT CAUSE UNKNOWN
G	BP1	015326B	072276	BA	SA	A1432	C		D		RDS BATTERY D PILOT CELL HAD LOW SPECIFIC GRAVITY	ADDITION OF WATER POSSIBLE CAUSE
G	BP1	015327A	072876	BA	SA	A17	C		U		RDS BTTRY C PILOT CELL LOW ELECTROLYTE LEVEL	UNKNOWN CAUSE
G	BP1	015327B	072976	BA	SA	T14	C	U	D		RDS BTTRY C PILOT CELL RDG LO SPECIFIC GRAVITY	DFCTV PROC SPECIFIC GRAVITY READ TOO SOON
G	BP1	015444	081276	BA	DB	B33	N		T		EMERGENCY DIESEL GENERATOR DID NOT START DUE TO L-	-OOSE BATTERY CONNECTION.
G	BP1	0160738	100376	BA	SA	A17	A		U		RDS D BTTRY PILOT & 3 OTHER CELLS LO ELECTROLYTE -	-LEVEL. UNKNOWN CAUSE
G	BP1	016073A	100476	BA	SA	A1405	A		D		RDS D BTTRY PILOT & 3 OTHER CELLS LO SPEC GRAVITY	INCOMPLETE ELECTROLYTE MIXING
G	BP1	016305A	102176	BA	SA	A14	D		U		RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	016459	110476	BA	SA	A14	C		U		RDS B PILOT CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE
G	BP1	016305B	112176	BA	SA	A14	D		U		RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	016584	120276	BA	SA	A14	D		U		RDS B BTTRY PILOT CELL 27 LO SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	017023	120976	BA	SA	A14	D		U		RDS B ONE CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	0170249	010477	BA	SA	M14	A	R	U	2	8 CELLS SPECIFIC GRAVITY FOUND BELOW 1.2. EVALUA-	-TION REVEALED ADEQUATE CAPACITY
G	BP1	017464	022477	BA	SA	M14	C	R	U		RDS BATTERY B HAD ONE CELL BELOW MINIMUM SPECIFIC-	-GRAVITY. ADEQUATE CAPACITY AVAILABLE
G	BP1	017463	031777	BA	SA	M14	C	R	U		SPECIFIC GRAVIY FOUND LOW IN 5 CELLS OF RDS BTTRY-	-"A". ADEQUATE CAPACITY AVAILABLE
G	BP1	0177049	033077	BA	UP	B3304	N	C	D	4	NO OUTPUT FROM ALL UPS BATTERY BANKS	CONNECTORS NOT TIGHTENED DURING INSTAL
G	BP1	018096A	042177	BA	SA	M14	C	R	U		RDS BATTERY B,CELL 27 FOUND TO HAVE LOW SPECIFIC -	-GRAVITY OF 1.191. FULL CAPACITY AVAIL
G	BP1	018096B	042777	BA	SA	M14	C		U		SPECIFIC GRAVITY OF LO MARGINAL CELLS ADJUSTED OF-	-RDS BATTERY B. FULL CAPACITY AVAILABLE
G	BP1	018462A	061677	BA	SA	A17	U	R	U		WATER ADDED TO CELL 27 OF RDS BATTERY "B"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	018462B	061677	BA	SA	T1432	C	V	D		SPECIFIC GRAVITY OF CELL 27 OF RDS BATTERY B LOW	WATER ADDED THEN TESTED TOO SOON
G	BP1	019025A	082977	BA	FP	B3302	N		D		DIESEL FIRE PUMP "A" BATTERY FOUND WITH NO OUTPUT	CONNECTORS NOT TIGHTENED
G	BP1	0190259	082977	BA	FP	B00	N		U		DIESEL FIRE PUMP "B" BATTERY FOUND FAILED WITH NO-	-OUTPUT. DISCHR WITH NO APPARENT CAUSE
G	BP1	019472A	092977	BA	SA	A17	U	R	U		WATER ADDED TO CELL 12 OF RDS BATTERY "A"	NO CAUSE GIVEN FOR LOW WATER LEVEL

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY NSSS VENDOR

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILED CODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	BP1	0194728	092977	BA	SA	A1432	C	R	D		SPECIFIC GRAVITY OF CELL 12 OF RDS BATTERY "A" LOW	WATER ADDED,CHARGE INSUFFICIENT TO MI>
G	BP1	0195428	100877	BA	SA	A17	U	R	U		WATER ADDED TO 3 CELLS OF RDS BATTERY "D"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	0195428	102077	BA	SA	A1432	C	R	D		SPECIFIC GRAVITY OF 3 CELLS OF RDS BATTERY "D" LOW	WATER ADDED,MIXING WAS INADEQUATE
G	BP1	020176	122277	BA	SA	A14	C	R	U		SPECIFIC GRAVITY ON RDS BATTERY "A",CELL 12 LOW	EQUALIZING CHARGE FOR 8 HOURS CORRECTED
G	BP1	021307	050478	BA	FP	A17	D		U		FIRE PUMP DIESEL STARTG BTTRY A CELLS 1,3,5 LO --	ELECTROLYTE SOLN. EXACT CAUSE UNKNOW>
G	BP1	021519	052578	BA	FP	A1705	D		D		FIRE PUMP DIESEL STARTG BTTRY "A" CELLS 2,4,6 LO--	ELECTROLYTE SOLN. INADQ MAINTENANCE PROC
G	BP1	022664	083178	BA	SA	A14	C	R	U		RDS BATTERY A, CELL 12 LO SPECIFIC GRAVITY READING	EXACT CAUSE UNKNOWN
G	BP1	027985	110179	BA	SA	A1420	C		U		SPECIFIC GRAVITY OF CELL 48 OF RDS BATTERY C LOW	CELL REPLACED,WOULD NOT TAKE EQUAL CHARGE
G	BP1	030237	012480	BA	SA	A1420	C		U		RDS C BTTRY CELL 14 LOW SPECIFIC GRAVITY RDG	DEFECTIVE CELL REPLACED
G	BP1	031176	050180	BA	SA	A1420	C		U		RDS BTTRY "A" CELL 2 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BP1	031848	071080	BA	SA	A1420	C		U		RDS C BTTRY CELLS 35,54 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BP1	032023	071880	BA	SA	A20	D		U		RDS C BTTRY PILOT CELL UNIT-9 INTERNAL RESISTANCE-	-INCRS. CAUSE UNKNOWN
G	BP1	032297	080780	BA	SA	A14	C		U		RDS C BTTRY CELLS 38,39,56 LOW SPECIFIC GRAVITY	VENDOR RECOM INCRS IN FLOAT VOLTAGE LEVEL
G	BP1	032656	091180	BA	SA	A1420	C		U		RDS D BATTERY CELL 12 LOW SPECIFIC GRAVITY RDG	CELL DID NOT ADQ RESPOND TO EQUALIZG CHRG
G	BP1	033544	121180	BA	SA	A1402	C		D		21 CELLS OF RDS "A" BATTERY LOW SPECIFIC GRAVITY	CELL TERMINALS INADQ CLEANED BY MAINT PER
G	BP1	033637	122380	EA	NN	T02	R	U	D		DC BATTERY MONTHLY TESTS OVERDUE	INADQ ADMIN CONTROLS & PERSONNEL ERROR
G	BP1	037338	010281	BA	SA	A1420	C	R	U		RDS CH D BATTERY CELL 56 HAD LOW SG,WOULD NOT RES-	-POND TO EQUALIZING CHARGE.
G	BP1	038112	081581	BA	SA	A1602	A	C	D		FOUND PILOT CELL IN CH A RDS POWER SUPPLY WITH A -	-HIGH ELEC LEVEL. POSSIBLY OVERFILLED
G	BP1	038592	083181	BA	ST	A2014	C	C	D		LOW SG IN CELL 43 OF ST BTTRY,CELL FOUND CRACKED.-	-THIS LEAD TO DILUTION.CRACKED WHEN MOVED
G	BP1	038785	091581	BA	SA	A1420	C		U		"A" RDS BTTRY CELL #5 LOW SPECIFIC GRAVITY	CELL DIDN'T RESPOND ADQ TO EQUALIZG CHRG
G	BR1	019389	102177	BC	NN	B2206	B		U		BATT CHRGR DC OUTPT FUSE FAILD WHEN CHRG BATT 2B-2	HI CURR/TEMP CAUSD SOLDERD LINKG SEPARATE
G	BR1	025637A	032579	BA	NN	A3308	B	R	T		BATTERY 182 VOLTAGE FELL TO 102.5V THEN ROSE TO -	-118V. CORRODED AND LOOSE BTTRY CONNECT
G	BR1	025637B	032779	BA	NN	A3308	B	R	T		BTTRY 181 VOLTAGE FELL TO 96.8V THEN ROSE TO 118V	CORRODED AND LOOSE BTTRY CONNECTORS
G	BR2	014651	021276	BA	NN	T05	R	U	D		MONTHLY INSTEAD OF QUARTERLY BATTERY P.T. PERFORMD	WRONG P.T. SCHEDULED BY MISTAKE
G	CO1	0221014	062778	BC	NN	B2333	N		T		1A 250V BTTRY CHRGR TIE BREAKER TRIPPED	POOR CNNCTR CNTCTS IN CURRENT MODULE
G	CO1	0221018	062778	BC	NN	B3304	N	U	D		1A 250V BTTRY CHRGR INPUT BREAKER TRIPPED	LOOSE CNNCTN AT CHRGR INPUT BRKR PHASE A
G	CO1	037646	050581	BC	ST	G29	B		U		HIGH RIPPLE FROM BATTERY CHARGER WHICH FAILED INV-	-ERTER 1A. FAILED SCR
G	CO1	037938	052881	BA	ST	T03	R	U	D		SG TESTS FOR 125V 1A&B AND 250V 1B NOT PERFORMED -	-PROPERLY. PERSONNEL USED WRONG HYDROM
G	DA1	030982	041780	BA	NN	T02	R	U	D		WKLY BATT SURV DOCUMENTATION NOT COMPLETED	PERSONNEL ERROR-NONLIC. OPERATIONS PERS
G	DA1	171665	120881	BC	NN	E00	N		U		BATTERY CHARGER OUTPUT INCORRECT	UNKNOWN
G	DR1	0185538A	072977	BA	FP	B3413	N	C	D	2	DIESEL FIRE PUMP BATTERIES FAILED TO START DIESEL	FAILED FUSE FROM BATTERY CHARGER CIRCUIT
G	DR1	0185538	072977	BC	FP	B22	N		U		FUSE FOUND BLOWN IN DIESEL FIRE PUMP BATTERY CHAR-	-GER.

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY NSSS VENDOR

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	DR2	039116	102181	BA	NN	T01	R	U	D		QUARTERLY STORAGE BATTERY SURVEILLANCE DONE 3 DAY-	-S LATE. OVERSIGHT BY OPERATING SHIFT
G	DR3	0162658	101876	BA	NN	A34	A		D		BATTERY IN A DEGRADED CONDITION	CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"
G	DR3	0162658	101876	BC	NN	C00	A		U		CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"	UNKNOWN CAUSE
G	DR3	020853	032878	BA	NN	A10	F	R	T		24/48 V BTTRY FAILED THE REFUELING OUTAGE DISCHRG-	-TEST. 4 CELLS REPLCD NAT'L END OF LIFE
G	DR3	025951	042479	BA	NN	B01	N	U	D		UNIT 2'S BATTERY NOT RETURNED TO NORMAL LINEUP	BREAKER COULD HAVE BEEN SHUT AT ANY TIME
G	DR3	036569	090381	BA	NN	T01	R	U	D		WEEKLY STORAGE BATTERY SURVEILLANCE DONE 4 DAYS L-	-ATE. OVERSIGHT BY OPERATING SHIFT
G	EN1	021475*	060478	BC	ST	M1304	M		D	2	HEAT-SENSITIVE XSTR ON BATT CHRGR FIRING MODUL CRD	SHOULD BE A NON-HEAT-SENSITIVE TRANSISTOR
G	EN1	021719	062778	BA	DB	T02	R	U	D		WKLY PILOT CELL SURV OF 1C D/G BTTRY NOT COMPLET--	ED ON TIME. PERSONNEL OVERSIGHT
G	EN1	027782	112679	BA	NN	T03	R	U	D		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	EN2	022208	081678	BA	NN	T02	R	U	D		WKLY PILOT CELL SURV OF PLANT BATT NOT COMPLETED--	ON TIME. NOTICES ROUTED TO ABSENT PERS
G	EN2	026657	071879	BA	NN	T03	R	V	D		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	EN2	030651*	032580	BC	ST	A2122	G		U	2	EMER STATION BATT CHRGR 2G,2J FAILD TO HOLD LOAD	VOLTG CNTRL & CURR LMT MODULES TUNED
G	EN2	0307114	032780	BC	ST	A29	G		U	2	STATION BATT CHRG 2A,2B FAILED TO MAINTAIN LOADS	SILICON CNTRL RECTIFIERS NEED LOAD BALANC
G	EN2	0307118	032780	BC	ST	A22	G		U		STATION BATT CHRG 2C FAILED TO MAINTAIN LOAD	CURRENT LIMIT MODULE NEEDED ADJUSTMENT
G	EN2	033891	081180	BA	ST	B30	M		U		DC BATT GROUND ON 2B STATION SERVICE BATTERY	NO CAUSE GIVEN
G	EN2	0329814	032381	BA	AM	B1834	N		D		POST TREATMENT MON 2011-K615A BATTERY DRAINED	BATTERY CHARGER 2AB 24/48 VDC FAILED
G	EN2	0329818	032381	BC	NN	B00	N		U		24/48 VDC BATTERY CHARGER FOUND NOT CHARGHING	NO CAUSE GIVEN
G	EN2	036943A	040781	BA	ST	A1602	N	C	D	2	ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF ST -	-BTTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943B	040781	BA	ST	A1702	N	C	D	2	ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF ST B-	-TTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943C	040781	BA	DB	A1602	N	C	D		ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF DIE-	-SEL GENERATOR BATTERY. PERSONNEL ERROR
G	EN2	036943D	040781	BA	DB	A1702	N	C	D		ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF DIES-	-EL GENERATOR BATTERY. PERSONNEL ERROR
G	FP1	019457	102077	BA	ST	A20	U		U		STATION BATTERY "B" FOUND TO HAVE CRACKED CELL	NO CAUSE KNOWN FOR CRACKED CELL #228
G	FP1	021433	053178	BA	FP	A1420	A		U		LO S.G. OF BTTRY A2 CELL 1	BAD CELL IN BATTERY
G	FP1	026922	090479	BA	ST	A20	N		U		LEAKING CELL NOTED IN BATTERY "B". BATTERY TEMPOR-	-ARILY INOP WHILE CELL JUMPERED
G	FP1	031743*	062880	BA	FP	A14	A		T	2	DIESEL FIRE PUMP 24V BATT CELLS A2-6,B2-1 LOW S.G.	CHARGER OOS DURING SURVEILLANCE
G	FP1	033280	111780	BA	ST	A10	N		T		STATION BTTRY B MADE INOP TO JUMP A CELL	CELL #8 POOR PERFORMANCE DUE TO AGE
G	FP1	171811	123081	BA	NM	B18	N		D	2	LOW VOLTAGE FROM DIVISION I 24 VDDC BATTERIES,CAUS	-ED ERRATIC READINGS ON LRM & SRM INST
G	MT1	014478	040776	BA	SY	T01	R	U	D		SWITCHYARD BTTRY SURVEILLANCE NOT PERFORMED W/IN--	RED TIME PERIOD. PERSONNEL ERROR
G	MD1	1667304	061581	BA	NN	A3401	A		D		250 VDC BATTERY INADVERTENTLY DISCHARGED	PERS DISCONNECTED TEMP BATTERY CHARGER
G	MD1	1667308	061591	BC	NN	B01	A	U	D		TEMPORARY BATTERY CHARGER TAKEN OUT OF SERVICE	PERSONNEL ERROR,CAUSED BTTRY TO DISCHARGE
G	OC1	018293A	062877	BA	SY	B34	U	C	D		ONE OF TWO SWITCHING STATION BATTERIES FOUND OOS -	-FOR 11 DAYS. BATTERY CHARGER FAILED
G	OC1	0182938	062877	BC	SY	B2713	U		U		BATTERY CHARGER FOR SWITCHING STATION BATTERY FOU-	-ND OOS AFTER 11 DAYS

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY NSSS VENDOR

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	OC1	021497A	052478	BA	DB	T01	N	U	D		D/G BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	021497B	052478	BA	ST	T01	N	U	D		STATION BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	023298A	121378	BA	DB	T01	R	U	D		D/G BTTRY NOT TESTED/MONITORED W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	023298B	121378	BA	ST	T01	R	U	D		STATION BTTRY NOT TEST/MONITOR W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	030599A	022880	BA	ST	T02	R	U	D		MAIN STATION BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	OC1	030599B	022880	BA	DB	T02	R	U	D		DIESEL GENERATOR BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	OC1	038737	091181	BA	NN	T02	R	U	D		BATTERY SURVEILLANCE PROCEDURES FOUND NOT TO FULL-	-Y COMPLY WITH NEW REQUIREMENTS.
G	PB3	014211	012976	BA	NN	A14	B		L		B BTTRY CAPACITY BELOW DESIGN	CELL S.G. IN LO RNG, PARTIAL ACID RPLCD
G	PI1	027950A	122379	BC	SY	B00	U	R	U		SWITCHYARD 125 VDC BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	PI1	027950B	122479	BC	SY	B00	N	R	U		SWITCHYARD 125 VDC BACKUP BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	PI1	033899	082180	BC	NN	B211	N		U		"A" 125 VDC CONTROL BATT CHARGER INOPERABLE	VOLTAGE REGULATOR ELECTRONIC MODULES RPLC
G	QC1	019222	092477	BA	NN	M201	U		T		BATTERY SYSTEM TAKEN OUT OF SERVICE	REPLACED 12 WEAK CELLS,NORMAL END OF LIFE
G	QC2	018164	031777	BC	NN	C23	U		U		UNITS BATTERY CHARGER APPARENTLY INOPERABLE	FAULTY INDUCTIVE CURRENT CONTROL CIRCUIT
G	QC2	018460	060977	BC	NN	E2101	N	U	D		BATTERY CHARGER SUPPLYING CURRENT TO BATTERY FOUN-	-D LOW. FLOATING POTENTIOMETER SET LOW
G	VY1	016217A	101376	BA	UP	A34	N	R	U		UPS-1B CNTRL PWR BTTRY VOLTAGE WAS LOW	CNTRL BATT CHRGNG POWER SUPPLY FAILED
G	VY1	016217B	101376	BC	UP	B21	N	R	U		CNTRL BTTRY CHARGING POWER SUPPLY FAILED	INOPERATIVE VOLTAGE REGULATOR CIRCUIT
G	VY1	018407A	031877	BA	UP	A3413	N	R	D		UPS-1B ALARMED DUE TO LOW VOLTAGE,CAUSED SCRAM	CAPACITOR FAILED IN CHARGING POWER SUPPLY
G	VY1	018407B	031877	BC	UP	B13	N		T		UPS-1B CONTROL CHARGING POWER SUPPLY FAILED	FAILED CAPACITOR IN ON/OFF CIRCUITRY
G	VY1	021749	061978	BC	NN	B06	N	S	D		AC INPUT BRKR TO CA1 BATT CHRGR TRPD OPEN	SPURIOUS TRP OF AC BRKR IN AN ELEC STERM
G	VY1	025519	031779	BC	UP	B00	N		U		CONTROL CHARGING POWER SUPPLY FAILED	NO CAUSE GIVEN. CAUSED BATTERIES DISCHR

APPENDIX D

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY COMPONENT

CODES USED IN LER ONE-LINE DESCRIPTIONS

NSSS VENDOR

CODE	DESCRIPTION
B	BABCOCK & WILCOX
C	COMBUSTION ENGINEERING
W	WESTINGHOUSE
G	GENERAL ELECTRIC

EVENT CLASSIFICATION

CODE	DESCRIPTION
D	FREQUENCY
T	AGE
U	UNKNOWN

COMPONENT

CODE	DESCRIPTION
BA	BATTERY
BC	BATTERY CHARGER

FAILURE CAUSE

CODE	DESCRIPTION
00	UNKNOWN
01	PERSONNEL OPERATION
02	PERSONNEL MAINTENANCE
03	PERSONNEL TESTING
04	DESIGN/FABRICATION/CONSTRUCTION/QUALITY CONTROL
05	DEFECTIVE PROCEDURES
06	EXTREME ENVIRONMENT
08	CORROSION
10	NORMAL WEAR/NATURAL END OF LIFE
11	ELECTRICAL MALFUNCTION
12	MECHANICAL MALFUNCTION
13	PIECE PART FAILURE
14	LOW SPECIFIC GRAVITY
15	STRATIFICATION
16	HIGH ELECTROLYTE SOLUTION LEVEL
17	LOW ELECTROLYTE SOLUTION LEVEL
18	INSUFFICIENT CHARGE
20	DEFECTIVE/WEAK CELLS
21	VOLTAGE REGULATOR MALFUNCTION
22	CURRENT LIMITER MALFUNCTION
23	CURRENT CONTROLLER MALFUNCTION
24	VOLTAGE LIMITER MALFUNCTION
25	THERMAL OVERLOAD PROTECTION
26	COOLING FAN/VENTILATION MALFUNCTION
27	CHARGE CONTROL MALFUNCTION
28	CHARGE CONTROL TIMER MALFUNCTION
29	RECTIFIER PROBLEM
30	SHORT CIRCUIT
32	ELECTROLYTE DILUTION
33	FAULTY CABLE/CONNECTORS
34	CHARGER MALFUNCTION

FAILURE MODE

CODE	DESCRIPTION
A	REDUCED CAPABILITY
B	NO OUTPUT
C	UNKNOWN/UNSPECIFIED/OTHER
D	HIGH CURRENT/VOLTAGE OUTPUT
E	LOW OUTPUT VOLTAGE
G	HIGH AC RIPPLE ON DC OUTPUT
M	MAINTENANCE REPLACEMENT
T	TEST NOT PERFORMED

TYPE EVENT

CODE	DESCRIPTION
B	RECURRING COMMON CAUSE
C	COMMON CAUSE
R	RECURRING
S	COMMAND FAULT
T	RECURRING COMMAND FAULT
J	COMMON CAUSE COMMAND FAULT
V	RECURRING COMMON CAUSE COMMAND FAULT
BLANK	RANDOM

ACTIVITY RESULTING IN DISCOVERY

CODE	DESCRIPTION
A	TESTING(UNSPECIFIED)
B	NORMAL LOAD TESTING
C	MONTHLY TESTING
D	WEEKLY TESTING
E	QUARTERLY TESTING
F	REFUELING TESTING
G	10 MONTH TESTING
H	5 YEAR TESTING
M	MAINTENANCE
N	NORMAL PLANT OPERATION
R	RECORDS REVIEW
U	UNKNOWN

FLAGGING FIELD

CODE	DESCRIPTION
A	FAILED COMPONENT CAUSED AN ACCIDENT
B	COMPONENT FAILED TO MITIGATE AN ACCIDENT
C	SAFETY SIGNIFICANT
D	FAIL # NOT KNOWN
E	CELL # NOT KNOWN
F	FAIL # AND CELL # NOT KNOWN
N	FROM NSIC DATA BASE

SYSTEM IDENTIFICATION CODES

CODE	DESCRIPTION
AM	AREA MONITOR SYSTEM
DB	EMERGENCY DIESEL GENERATOR
ES	ENGINEERED SAFETY FEATURE
FP	FIRE PROTECTION SYSTEM
FW	FEEDWATER SYSTEM
NM	NEUTRON MONITORING BATTERY
NN	UNKNOWN/UNSPECIFIED/OTHER
SA	AUTOMATIC (REACTOR) DEPRESSURIZATION (ADS)
SP	SPECIAL USE BATTERIES
ST	STATION BATTERIES/CHARGERS
SW	SERVICE WATER BUILDING BATTERIES/CHARGERS
SY	SWITCHYARD BATTERIES/CHARGERS
UP	UNINTERRUPTIBLE POWER SYSTEM (UPS)

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY COMPONENT

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCUDEE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
B	CR3	017166A	011277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166B	020277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166C	020977	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	021165	040578	BA	NN	T02	R	V	D		WRONG BTTRY CELLS MONITORED FOR WEEKLY BATT SURV	PERSONNEL NOT FOLLOWING PROCEDURES
B	CR3	038100	071481	BA	ST	B3002	N	C	D		STATION BATTERY SHORTED DURING MAINTENANCE	PERSONNEL ERROR. CAUSED REACTOR TRIP
B	DR1	020448	011978	BA	ST	A1415	E		U		IN BTTRY CELL 32 ELECTROLYTE S.G. DECRS .003 OOT	ELEC. STRAT. DUE TO LO BTTRY LOADING
B	DB1	021587	042778	BA	FP	A17	N		U		4 CELLS OF ENGINE BTTRY W/ ELECTROLYTE BELOW PLATE	ELEC. ADDED BROUGHT CELLS UP TO NORMAL
B	DB1	022362	090578	BA	ST	T02	R	U	D		STATION BATTERIES WKLY SURV TEST NOT DONE ON TIME	MISUNDERSTANDING BTWN PERSONNEL
B	DB1	025397	020879	BA	FP	A17	D		U		ELECTROL LEVEL IN 4 CELLS FOUND LO IN DSL ENG STA-	-RTING BTTRY. DIESEL STILL STARTED
B	DE3	015532	081076	BA	NN	T05	R	U	D		125-VDC INSTR & CNTRL BATTERIES NOT LOAD TESTED	DFCTV PROC* WRONG DATA IN SURV PRINTOUT
B	DE3	022183	072778	BA	NN	B33	B		U		SMOKE FROM 1 TERMINAL OF I&C BATTERY 3C8	TERMINAL DFCTV/CNNCTNS FOUND DEFECTIVE
C	AR2	026489	052279	BA	ST	T03	R	U	D		SURVEILLANCE NOT PERFORMED ON STATION BATTERIES	PERSONNEL OVERSIGHT
C	CC1	021533	050378	BA	NN	A00	A		U		125 VDC BTTRY 22 CELL 54 ICV BELOW MIN VOLTAGE	CAUSE UNKNOWN
C	CC1	037262	050681	BA	NN	M20	A		U		VOLT OF CELL 18 OF 125 VDC BATTERY 12 FOUND .08V -	-BELOW MINIMUM. FULL CAPACITY AVAILABLE
C	CC2	017344	021777	BA	NN	B01	N	S	D		#11 125 VDC BATTERY INADVERTENTLY TAKEN OUT OF SE-	-RVICE. SUPERVISOR GAVE PERMISSION
C	MI2	026979	080379	BA	NN	M20	A		U		VARICOS CELLS REPLACED IN 2018 BTTRY (4 CELLS)	REDUCTION IN CELL VOLT. FULL CAPACITY
C	PA1	025917	040479	BA	ST	B2005	A	C	D		2 CELLS IN STATION BATTERY #2 BURST WHILE TAKING -	-VOLTAGE READINGS. FULL CAPACITY AVAI
C	PA1	036000*	010681	BA	ST	B02	U	U	D	2	OUTPUT BREAKER FOR BOTH STATION BATTERIES WERE OP-	-ENED FOR 1 HOUR. PERSONNEL ERROR
W	BV1	016357	102476	BA	NN	M00	A		U		VOLTAGE DECREASED IN CELL 48 BY MORE THAN 0.05V	UNKNOWN. CELL 48 FROM BTTRY 3, 1650 A.H.
W	BV1	017119A	020477	BA	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON #3 & #4 STATIO-	-N BATTERIES. PERSONNEL ERROR
W	BV1	028147	092179	BA	NN	M2010	A		T		CELL #6 OF BATTERY NO. 1 COULD NOT HOLD ORIGINAL -	-VOLTAGE. FULL BATTERY CAPACITY AVAIL.
W	BV1	039154	101781	BA	NN	M20	E	R	U		2 OF 60 CELLS VOLTAGE FOUND DROPPED BY .05 VDC	NO CAUSE GIVEN, BATTRY HAD FULL CAPACITY
W	DC2	021633	060778	BA	NN	A14	A		U		CD PLANT BTTRY CELL 89 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	DC2	021632	061578	BA	NN	A14	A		U		AB PLANT BTTRY CELL 35 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	DC2	039127	101981	BA	NN	T05	R	U	D		SURVEILLANCE NOT PERFORMED ON "N" TRAIN BATTERY	PROCEDURE LACKED SIGNOFF
W	JF1	021235A	041878	BA	SW	B00	E		U		2 CELLS IN SW BLDG "A" BATT BANK 1 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	JF1	021235B	041878	BA	SW	B00	E		U		2 CELLS IN SW BLDG B BATT BANK 2 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	JF1	027181	090679	BA	NN	T03	R	U	D		QUARTERLY AUXILIARY BUILDING BATTERY VERIFICATION-	-NOT PERFORMED ON TIME. PERSONNEL
W	JF1	032332A	081280	BA	SW	A14	A	R	U		SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	BATT PLACED ON EQUALIZE & S.G. ACCEPTABLE
W	JF1	032332B	082580	BA	SW	A14	A	R	U		SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	NO EXTERNAL CAUSE FOR LOW SPECIFIC GRAV
W	JF1	032687	091180	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LO BATT CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033007	102180	BA	SW	A1404	A		D		SW "A" BTTRY SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY COMPONENT

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	JF1	033163	102880	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM PROX/ACID RES/POST SEAL DESIGN
W	MG1	039186	101981	BA	ST	A3308	M		T		CELL TO CELL RESISTANCE IN 3 CELLS FOUND HIGH	CORROSION OF TERMINAL CONNECTIONS
W	NA1	026565	062879	BA	DB	T05	R	U	D		7 DAY SURVEILLANCE OF EMERGENCY DIESEL GENERATOR -	-BATTERIES EXCEEDED INTERVAL. PROCEDURAL
W	NA1	026656	073179	BA	DB	T05	R	U	D		DIESEL GENERATOR BATTERIES SURVEILLANCE NOT DONE	TIME LAG IN IMPLEMENTING NEW PROCEDURES
W	NA1	036491A	022881	BA	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	NA1	171672	120181	BA	DB	A1410	A		T		1J EMERGENCY D/G INOP CELL S.G. BELOW 1.2	D/G BATTERY NEAR END OF USEFUL LIFE
W	NA2	036466*	021881	BA	DB	M14	E		U	2	BATTERIES FOR 2J & 2H DIESEL GENERATORS FAILED SU-	-RVEILLANCE TEST. 4 CELLS REPLACED
W	NA2	036417	022081	BA	DB	T05	R	U	D		DATA FROM TWO TESTS ON 2J DIESEL BATTERY FOUND NO-	-T USABLE. NOT COMPARED WITH INITIAL CON
W	PR1	025268	053179	BA	FP	T05	R	U	D		DIESEL DRIVEN WEEKLY BATTERY INSPECTION NOT DONE	PROCEDURES WERE DEFECTIVE
W	PR1	030917	033180	BA	ST	T02	R	U	D		INDIVIDUAL FLOAT CELL VOLT MEAS NOT DONE IN STATI-	-ON BATTERY TEST. PERSONNEL OVERSIGHT
W	RO2	015515	071076	BA	NN	B02	M		D		BATTERY B LEADS WERE REMOVED RENDERING BATT INOP	PERS FAILED TO COMPLY W/ T.S. 3.7
W	RO2	021898	071678	BA	ST	B3311	N		D		PLASTIC TOP OF 2 STATN "A" BATT CELLS ON FIRE	RESISTNC HEATG OF STRAP-CELL TERMINAL
W	SA1	020738A	020178	BA	NN	A34	N		U		1C 125V BATTERY VOLTAGE LOW	1C1,1C2 BATT CHARGER D.C. BRKRS TRPD
W	SA1	032162	072180	BA	FP	T02	R	U	D		92 DAY & 18 MON SURV NOT DONE ON 24 V STARTG BATT	ELECTRICIAN NOT COMPLETING JOB
W	SA1	039834	091881	BA	FP	B33	N		U		BATTERY CABLE CLAMP FOUND ARCING AND CRACKED	CLAMP WAS REPLACED ON #2 FIRE PUMP BTTRY
W	SA2	038683	090681	BA	AM	B00	N		U		RAD MONITOR 2R12A BATTERY PACK FAILED	NO CAUSE GIVEN
W	SE1	032338	080780	BA	DB	B30	N		U		D/G BTTRY 1B-B CELL 51 SHURTED AND FAILED	NO CAUSE GIVEN
W	SE1	032342A	081280	BA	DB	B05	U		D		D/G BTTRY 1B-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	SE1	0323428	081380	BA	DB	B05	U		D		D/G BTTRY 1B-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	SU2	038470	090681	BA	FP	B00	U		U		SOMKE DETECTOR BATERY FOUND NOT TO TAKE A CHARGE	NO CAUSE GIVEN
W	SU2	038936A	100181	BA	FP	B34	A		D		SMOKE DETECTOR BATTERY FAILED	CHARGER NOT CHARGING BATTERY
W	TR1	014563	032476	BA	ES	T05	R	U	D		ESF DC PWR SUPPLIES SURV REQ PERFORMD AT WRNG FREQ	PROCEDURE DID NOT USE FREQ REQ BY T.S.
W	TR1	020885	031778	BA	NN	T02	R	U	D		125 VDC ELECTRICAL SYS OP NOT VERIFIED WK OF 2-26	MAINT PERS FAILD TO INSURE SURV COMPLETED
W	TR1	025211A	011979	BA	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TR1	032622	090380	BA	FW	B20	N		U		DIESEL-DRIVEN AFWP FAILD TO START FROM MANUAL SIG	FAILED STARTING BATTERY
W	TU3	0220618	122277	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	TU3	0220618	122977	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	TU3	0335308	121180	BA	NN	T34	N	U	T		4B 125 VDC BATT OOS,TECH SPEC EXCEEDED	PROBLEM W/ ASSOCIATED BTTRY CHARGER
W	TU3	039363	111281	BA	NN	B20	A	R	U		"3A" 125 VDC FAILED TO HOLD A CHARGE	BEING EVALUATED W/ MANUFACTURER
W	YR1	019861	120577	BA	ST	A20	E		U		CELL VOLTAGE ON CELL 18 OF BANK 1 FOUND LOW	NO CAUSE FOUND,CELL REPLACED
W	ZI1	171128A	121281	BA	NN	B01	M	U	D		UNIT 2 212 BATTERY TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
W	ZI1	172130	121581	BA	NN	C05	U	U	D		EQUALIZING CHARGE NOT PLACED ON BATTERY 112	PROCEDURE NOT CLEAR ON COMMUNICATIONS

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY COMPONENT

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCUDEE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	BF1	038C85	072281	BA	NN	A20	U		U		250 VOLT MAIN BATTERY TAKEN OOS TO BYPASS A CRACK-	-ED CELL.
G	BF2	015394	070976	BA	NM	B3302	M	U	D		NEUTRON MONITORING BATTERY 2A MADE INOPERABLE	CNNCTR BROKEN OFF A CELL POST PERS ERROR
G	BF2	025671	041979	BA	SP	B3302	N	C	D		BROKEN TERMINAL DISCOVERED ON S/O BOARD "D" BTTRY	PERSONNEL ERROR. ALSO AFFECTED UNIT 1
G	BP1	0152488	063076	BA	ST	A18	N		D		LOAD ON BTTRY REDUCED VOLTAGE & SPECIFIC GRAVITY	STATION BATTERY CHARGER HAD FAILED
G	BP1	015326A	072276	BA	SA	A17	C		U		RDS BATTERY D PILOT CELL LOW ELECTROLYTE LEVEL	EXACT CAUSE UNKNOWN
G	BP1	015326B	072276	BA	SA	A1432	C		D		RDS BATTERY D PILOT CELL HAD LOW SPECIFIC GRAVITY	ADDITION OF WATER POSSIBLE CAUSE
G	BP1	015327A	072876	BA	SA	A17	C		U		RDS BTTRY C PILOT CELL LOW ELECTROLYTE LEVEL	UNKNOWN CAUSE
G	BP1	0153278	072976	BA	SA	T14	C	U	D		RDS BTTRY C PILOT CELL RDG LO SPECIFIC GRAVITY	DFCTV PROC SPECIFIC GRAVITY READ TOO SOON
G	BP1	015444	081276	BA	DB	B33	N		T		EMERGENCY DIESEL GENERATOR DID NOT START DUE TO L-	-OOSE BATTERY CONNECTION.
G	BP1	0160738	100376	BA	SA	A17	A		U		RDS D BTTRY PILOT & 3 OTHER CELLS LO ELECTROLYTE -	-LEVEL. UNKNOWN CAUSE
G	BP1	016073A	100476	BA	SA	A1405	A		D		RDS D BTTRY PILOT & 3 OTHER CELLS LO SPEC GRAVITY	INCOMPLETE ELECTROLYTE MIXING
G	BP1	016305A	102176	BA	SA	A14	D		U		RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	016459	110476	BA	SA	A14	C		U		RDS B PILOT CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE
G	BP1	0163058	112176	BA	SA	A14	D		U		RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	016584	120276	BA	SA	A14	D		U		RDS B BTTRY PILOT CELL 27 LO SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	017023	120976	BA	SA	A14	D		U		RDS B ONE CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	017024*	010477	BA	SA	M14	A	R	U	2	8 CELLS SPECIFIC GRAVITY FOUND BELOW 1.2. EVALUA-	-TION REVEALED ADEQUATE CAPACITY
G	BP1	017464	022477	BA	SA	M14	C	R	U		RDS BATTERY B HAD ONE CELL BELOW MINIMUM SPECIFIC-	-GRAVITY. ADEQUATE CAPACITY AVAILABLE
G	BP1	017463	031777	BA	SA	M14	C	R	U		SPECIFIC GRAVIY FOUND LOW IN 5 CELLS OF RDS BTTRY-	-"A". ADEQUATE CAPACITY AVAILABLE
G	BP1	017704*	033077	BA	UP	B3304	N	C	D	4	NO OUTPUT FROM ALL UPS BATTERY BANKS	CONNECTORS NOT TIGHTENED DURING INSTAL
G	BP1	018C96A	042177	BA	SA	M14	C	R	U		RDS BATTERY B,CELL 27 FOUND TO HAVE LOW SPECIFIC -	-GRAVITY OF 1.191. FULL CAPACITY AVAIL
G	BP1	0180968	042777	BA	SA	M14	C		U		SPECIFIC GRAVITY OF LO MARGINAL CELLS ADJUSTED OF-	-RDS BATTERY B. FULL CAPACITY AVAILABLE
G	BP1	018462A	061677	BA	SA	A17	U	R	U		WATER ADDED TO CELL 27 OF RDS BATTERY "B"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	0184628	061677	BA	SA	I1432	C	V	D		SPECIFIC GRAVITY OF CELL 27 OF RDS BATTERY B LOW	WATER ADDED THEN TESTED TOO SOON
G	BP1	019025A	082977	BA	FP	B3302	N		D		DIESEL FIRE PUMP "A" BATTERY FOUND WITH NO OUTPUT	CONNECTORS NOT TIGHTENED
G	BP1	0190258	082977	BA	FP	B00	N		U		DIESEL FIRE PUMP "B" BATTERY FOUND FAILED WITH NO-	-OUTPUT. DISCHR WITH NO APPARENT CAUSE
G	BP1	019472A	092977	BA	SA	A17	U	R	U		WATER ADDED TO CELL 12 OF RDS BATTERY "A"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	0194728	092977	BA	SA	A1432	C	R	D		SPECIFIC GRAVITY OF CELL 12 OF RDS BATTERY "A" LOW	WATER ADDED,CHARGE INSUFFICIENT TO MIX
G	BP1	019542A	100877	BA	SA	A17	U	R	U		WATER ADDED TO 3 CELLS OF RDS BATTERY "D"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	019542B	102077	BA	SA	A1432	C	R	D		SPECIFIC GRAVITY OF 3 CELLS OF RDS BATTERY "D" LOW	WATER ADDED,MIXING WAS INADEQUATE
G	BP1	020176	122277	BA	SA	A14	C	R	U		SPECIFIC GRAVITY ON RDS BATTERY "A",CELL 12 LOW	EQUALIZING CHARGE FOR 8 HOURS CORRECTED
G	BP1	021307	050478	BA	FP	A17	D		U		FIRE PUMP DIESEL STARTG BTTRY A CELLS 1,3,5 LO --	ELECTROLYTE SOLN. EXACT CAUSE UNKNOWN

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY COMPONENT

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	BP1	021519	052578	BA	FP	A1705	D		D		FIRE PUMP DIESEL STARTG BTTRY "A" CELLS 2,4,6 LO--	ELECTROLYTE SOLN. INADQ MAINTENANCE PROC
G	BP1	022664	083178	BA	SA	A14	C	R	U		RDS BATTERY A, CELL 12 LO SPECIFIC GRAVITY READING	EXACT CAUSE UNKNOWN
G	BP1	027985	110179	BA	SA	A1420	C		U		SPECIFIC GRAVITY OF CELL 48 OF RDS BATTERY C LOW	CELL REPLACED,WOULD NOT TAKE EQUAL CHARGE
G	BP1	030237	012480	BA	SA	A1420	C		U		RDS C BTTRY CELL 14 LOW SPECIFIC GRAVITY RDG	DEFECTIVE CELL REPLACED
G	BP1	031176	050180	BA	SA	A1420	C		U		RDS BTTRY "A" CELL 2 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BP1	031848	071080	BA	SA	A1420	C		U		RDS C BTTRY CELLS 35,54 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BP1	032023	071880	BA	SA	A20	D		U		RDS C BTTRY PILOT CELL UNIT-9 INTERNAL RESISTANCE-	-INCRS. CAUSE UNKNOWN
G	BP1	032297	080780	BA	SA	A14	C		U		RDS C BTTRY CELLS 38,39,56 LOW SPECIFIC GRAVITY	VENDOR P*COM INCRS IN FLOAT VOLTAGE LEVEL
G	BP1	032656	091180	BA	SA	A1420	C		U		RDS D BATTERY CELL 12 LOW SPECIFIC GRAVITY RDG	CELL DID NOT ADQ RESPOND TO EQUALIZG CHRG
G	BP1	033544	121180	BA	SA	A1402	C		D		21 CELLS OF RDS "A" BATTERY LOW SPECIFIC GRAVITY	CELL TERMINALS INADQ CLEANED BY MAINT PER
G	BP1	033637	122380	BA	NN	T02	R	U	D		DC BATTERY MONTHLY TESTS OVERDUE	INADQ ADMIN CONTROLS & PERSONNEL ERROR
G	BP1	037338	010281	BA	SA	A1420	C	R	U		RDS CH D BATTERY CELL 56 HAD LOW SG,WOULD NOT RES-	-POND TO EQUALIZING CHARGE.
G	BP1	038112	081581	BA	SA	A1602	A	C	D		FOUND PILOT CELL IN CH A RDS POWER SUPPLY WITH A -	-HIGH ELEC LEVEL. POSSIBLY OVERFILLED
G	BP1	038592	083181	BA	ST	A20.4	C	C	D		LOW SG IN CELL 43 OF ST BTTRY,CELL FOUND CRACKED.-	-THIS LEAD TO DILUTION.CRACKED WHEN MOVED
G	BP1	038785	091581	BA	SA	A1420	C		U		"A" RDS BTTRY CELL #5 LOW SPECIFIC GRAVITY	CELL DIDN'T RESPOND ADQ TO EQUALIZG CHRG
G	BP1	025637A	032579	BA	NN	A3308	B	R	T		BATTERY 1B2 VOLTAGE FELL TO 102.5V THEN ROSE TO -	-118V. CORRODED AND LOOSE BTTRY CONNECT
G	BP1	025637B	032779	BA	NN	A3308	B	R	T		BTTRY 1B1 VOLTAGE FELL TO 96.8V THEN ROSE TO 118V	CORRODED AND LOOSE BTTRY CONNECTORS
G	BR2	014651	021276	BA	NN	T05	R	U	D		MONTHLY INSTEAD OF QUARTERLY BATTERY P.T. PERFORMD	WRONG P.T. SCHEDULED BY MISTAKE
G	CO1	037938	052881	BA	ST	T03	R	U	D		SG TESTS FOR 125V 1A&B AND 250V 1B NOT PERFORMED -	-PROPERLY. PERSONNEL USED WRONG HYDROM
G	DA1	030982	041780	BA	NN	T02	R	U	D		WKLY BATT SURV DOCUMENTATION NOT COMPLETED	PERSONNEL ERROR-NONLIC. OPERATIONS PERS
G	DR1	018553A	072977	BA	FP	B3413	N	C	D	2	DIESEL FIRE PUMP BATTERIES FAILED TO START DIESEL	FAILED FUSE FROM BATTERY CHARGER CIRCUIT
G	DR2	039116	102181	BA	NN	T01	R	U	D		QUARTERLY STORAGE BATTERY SURVEILLANCE DONE 3 DAY-	-S LATE. OVERSIGHT BY OPERATING SHIFT
G	DR3	016265A	101876	BA	NN	A34	A		D		BATTERY IN A DEGRADED CONDITION	CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"
G	DR3	020853	032878	BA	NN	A10	F	R	T		24/48 V BTTRY FAILED THE REFUELING OUTAGE DISCHRG-	-TEST. 4 CELLS REPLCD NAT'L END OF LIFE
G	DR3	025951	042479	BA	NN	B01	N	U	D		UNIT 2'S BATTERY NOT RETURNED TO NORMAL LINEUP	BREAKER COULD HAVE BEEN SHUT AT ANY TIME
G	DR3	036569	030381	BA	NN	T01	R	U	D		WEEKLY STORAGE BATTERY SURVEILLANCE DONE 4 DAYS L-	-ATE. OVERSIGHT BY OPERATING SHIFT
G	EN1	021719	062778	BA	DB	T02	R	U	D		WKLY PILOT CELL SURV OF 1C D/G BTTRY NOT COMPLET--	ED ON TIME. PERSONNEL OVERSIGHT
G	EN1	027782	112679	BA	NN	T03	R	U	D		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	EN2	022208	081678	BA	NN	T02	R	U	D		WKLY PILOT CELL SURV OF PLANT BATT NOT COMPLETED--	ON TIME. NOTICES ROUTED TO ABSENT PERS
G	EN2	026657	071879	BA	NN	T03	R	V	D		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	EN2	033891	081180	BA	ST	B30	M		U		DC BATT GROUND ON 2B STATION SERVICE BATTERY	NO CAUSE GIVEN
G	EN2	032981A	032381	BA	AM	B1834	N		D		POST TREATMENT MON 2D11-K615A BATTERY DRAINED	BATTERY CHARGER 2AB 24/48 VDC FAILED

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY COMPONENT

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	EN2	036943A	040781	BA	ST	A1602	N	C	D	2	ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF ST -	-BTTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943B	040781	BA	ST	A1702	N	C	D	2	ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF ST B-	-ITRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943C	040781	BA	DB	A1602	N	C	D		ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF DIE-	-SEL GENERATOR BATTERY. PERSONNEL ERROR
G	EN2	036943D	040781	BA	DB	A1702	N	C	D		ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF DIES-	-EL GENERATOR BATTERY. PERSONNEL ERROR
G	FP1	019457	102077	BA	ST	A20	U		U		STATION BATTERY "B" FOUND TO HAVE CRACKED CELL	NO CAUSE KNOWN FOR CRACKED CELL #228
G	FP1	021433	053178	BA	FP	A1420	A		U		LO S.G. OF BTTRY A2 CELL 1	BAD CELL IN BATTERY
G	FP1	026922	090479	BA	ST	A20	N		U		LEAKING CELL NOTED IN BATTERY "B". BATTERY TEMPOR-	-ARILY INOP WHILE CELL JUMPERED
G	FP1	031743*	062880	BA	FP	A14	A		T	2	DIESEL FIRE PUMP 24V BATT CELLS A2-6,B2-1 LOW S.G.	CHARGER OOS DURING SURVEILLANCE
G	FP1	033280	111780	BA	ST	A10	N		T		STATION BTTRY B MADE INOP TO JUMP A CELL	CELL #8 POOR PERFORMANCE DUE TO AGE
G	FP1	171811	123081	BA	NM	B18	N		D	2	LOW VOLTAGE FROM DIVISION I 24 VCDC BATTERIES.CAUS	-ED ERRATIC READINGS ON LRM & SRM INST
G	MI1	014478	040776	BA	SY	T01	R	U	D		SWITCHYARD BTTRY SURVEILLANCE NOT PERFORMED W/IN--	REQ TIME PERIOD. PERSONNEL ERROR
G	MO1	166730A	061581	BA	NN	A3401	A		D		250 VDC BATTERY INADVERTENTLY DISCHARGED	PERS DISCONNECTED TEMP BATTERY CHARGER
G	OC1	018293A	062877	BA	SY	B34	U	C	D		ONE OF TWO SWITCHING STATION BATTERIES FOUND OOS -	-FOR 11 DAYS. BATTERY CHARGER FAILED
G	OC1	021497A	052478	BA	DB	T01	N	U	D		D/G BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	021497B	052478	BA	ST	T01	N	U	D		STATION BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	023298A	121378	BA	DB	T01	R	U	D		D/G BTTRY NOT TESTED/MONITORED W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	023298B	121378	BA	ST	T01	R	U	D		STATION BTTRY NOT TEST/MONITOR W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	030599A	022880	BA	ST	T02	R	U	D		MAIN STATION BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	OC1	030599B	022880	BA	DB	T02	R	U	D		DIESEL GENERATOR BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	OC1	038737	091181	BA	NN	T02	R	U	D		BATTERY SURVEILLANCE PROCEDURES FOUND NOT TO FULL-	-Y COMPLY WITH NEW REQUIREMENTS.
G	PB3	014211	012976	BA	NN	A14	B		U		B BTTRY CAPACITY BELOW DESIGN	CELL S.G. IN LO RNG, PARTIAL ACID RPLCD
G	QC1	019222	092477	BA	NN	M2010	U		T		BATTERY SYSTEM TAKEN OUT OF SERVICE	REPLACED 12 WEAK CELLS,NORMAL END OF LIFE
G	VY1	016217A	101376	BA	UP	A34	N	R	U		UPS-1B CNTRL PWR BTTRY VOLTAGE WAS LOW	CNTRL BATT CHRGNG POWER SUPPLY FAILED
G	VY1	018407A	031877	BA	UP	A3413	N	R	D		UPS-1B ALARMED DUE TO LOW VOLTAGE,CAUSED SCRAM	CAPACITOR FAILED IN CHARGING POWER SUPPLY
B	II2	023084*	111278	BC	NN	B13	B		U	2	CHRGRS 2-2A/B FUSE BLEW NO CHRGR FOR BANK 2-2SB	DEFECTIVE GATING FILTER MODULES
C	AR2	026904	080979	BC	NN	B1306	N	C	D		BATTERY CHARGER 2D31 FAILED. DC OUTPUT LAMP SOCK-	-ET BURNED UP DUE TO HIGH HEAT,VOLT,DIST
C	AR2	027808	121179	BC	NN	B21	N	S	D		BATTERY CHARGER 2D32 AC BREAKER TRIPPED	CURRENT SURGED WHEN SHIFTING TO FLOAT
C	AR2	039245*	110581	BC	NN	B00	N		U	2	OUTPUT BREAKER OF BATTERY CHARGER 2D34 TRIPPED OP-	-EN TWICE. NO CAUSE COULD BE FOUND
C	PA1	016177	102076	BC	NN	E2201	N		D		DC BUS-2 VOLTG FELL;VOLTG ON ASSOC AC BUSES FELL	CURR LMTR & OUTPUT BRKR SETTING ERRONEOUS
C	SL1	020069	121677	BC	NN	B00	N		D		OUTPUT LOST FROM "AB" BATTERY CHARGER	POWER SUPPLY BKR TRIPPED FOR NO REASON
C	SL1	037962	062481	BC	NN	T02	R	U	D		SURVEILLANCE REQUIREMENTS NOT MET ON "AB" BATTERY-	-CHARGER. MISINTERPRETATION OF TECH SPEC
C	SL1	038775	091881	BC	NN	B24	A	R	U		1A BATTERY CHARGER SHUTDOWN ON HIGH VOLTAGE	HIGH VOLTAGE DEVICE FOUND DEFECTIVE

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY COMPONENT

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	BV1	0171198	020477	BC	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON CHARGERS ASSOC-	-IATED WITH #3 & #4 STATION BTTRY. PERSON
W	BV1	021043	032078	BC	NN	E2713	N		U		DECR #4 DC BUS VOLTAGE DUE TO A FAULTY BTTRY CHRGR	FAILD COLLECTR RESISTR IN CHRGR CNTRL CKT
W	BV1	022136	080478	BC	ST	B00	B		U		#4 STATION BTTRY CHRGR OUTPUT BRKR TRIPPED	IMPROPR OP OF CKTBRK.CAUSE OF TRP UNKNOWN
W	BV1	037757	061581	BC	NN	B2506	N	R	D		#2 BATTERY CHARGER OUTPUT BREAKER FAILED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAD
W	BV1	038347	080581	BC	NN	B2506	N	R	D		#2 BATTERY CHARGER OUTPUT BREAKER TRIPPED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAD
W	BV1	038825	091081	BC	ST	B33	N		U		#4 STATION BATTERY CHARGER [illegible]EN OUT OF SERVICE	BAD ELECTRICAL CONNECTION IN OUTPUT
W	DC1	025643	032379	BC	NN	D01	N	U	D		125 VDC EQUALIZING CHARGE [illegible]H, FAILED INVERT-	-ER, CAUSED SCRAM AND SI. NO CAUSE
W	HN1	014608A	042576	BC	NN	D2833	N		U		BTTRY CHARGER A WENT INTO [illegible]RGE	FAULTY CNTCT ON CHARGER CONTROL TIMER
W	HN1	014608B	042576	BC	NN	D2122	N		U		VOLTG REG SPIKING TO 200 AMP [illegible]N SHUTTING OFF	FAULTY PHASING CRD IN CURRENT LIMITER CKT
W	IP3	014709	051076	BC	NN	B2630	A		U		BTTRY CHRGR TROUBLE ALARMED [illegible]GER FAN HAD TRPD	AC FAN MTR INOP EXPOSED WIRE BLEW A FUSE
W	IP3	015138	060876	BC	NN	B13	A	S	U		# 31 BTTRY CHRGR AC BRKR TRIPD BATT CHRGR INOP	PRESSURE SENSOR FAILED TRIPPING BREAKER
W	IP3	036207	012481	BC	NN	B2123	N		U		OUTPUT FROM CHARGER #32 DISCOVERED DROPPING	VOLTAGE AND CURRENT CONTROLLER REPLACED
W	IP3	038257	070681	BC	NN	B13	N	S	U		BATTERY CHARGER #32 DISCOVERED TRIPPED	FAILED DP AIR FLOW SENSOR SWITCH
W	JF1	032504	082580	BC	SW	B24	N	S	U		SW 8 DC DISTRIBUTION SYS INOP NO OUTPUT FROM BATT-	-CHRGR 4. HV S/D RELAY ACTUATED
W	NA1	0364918	022881	BC	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	PR1	033222	110580	BC	NN	A2911	A		U		#12 BTTRY CHRGR FAILD TO PROVIDE NORMAL OUTPUT	FIRING CARD B NOT PROVIDING PULSE TO SCR
W	PR1	014599	041476	BC	NN	B2133	B		U		#12 BATTERY CHARGER FAILED DISABLED "B" DC POWER	VOLTAGE CNTRL CRD LOOSE IN ITS SOCKET
W	SA1	0207388	020178	BC	NN	B00	N		U	Z	1C1,1C2 BATT CHARGER D.C. BRKRS TRIPPED	UNKNOWN CAUSE
W	SA2	038319	072481	BC	NN	B2101	N	U	D		2C1 BATTERY CHARGER DISCOVERED TRIPPED. VOLTAGE -	-SETTING WAS INCORRECTLY SET
W	SA2	038327	081281	BC	NN	B24	N		U		2B1 BATTERY CHARGER WOULD NOT PICK UP 28 VDC LOAD	HIGH VOLTAGE CUT-OUT ACTUATED
W	SU2	169141	081981	BC	FP	B13	N		U		SMOKE DET SYS INOP BTTRY CHRGR LOST POWER	FAULTY POWER SUPPLY CARD IN CHARGER
W	SU2	0389368	100181	BC	FP	B00	A		U		BATTERY CHARGER FOR SMOKE DETECTOR BATTERY FAILED	NO CAUSE GIVEN
W	TR1	0252118	011979	BC	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TU3	033530A	121180	BC	NN	C00	N		U		PROBLEMS WITH #B 125 VDC BATTERY CHARGER	NO CAUSE GIVEN
W	YP1	019476A	101477	BC	NN	B1210	N	R	T		NO. 2 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING
W	YR1	0194768	101477	BC	NN	T01	N	U	D		NO. 1 BATTERY CHARGER CROSS TIED TO NO. 2 BATTERY	OVERSIGHT CAUSE LCO STATED IN TECH SPEC
W	YP1	019640	110577	BC	NN	B1210	N	R	T		NO. 1 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING DUE TO NORMAL WEAR
W	Z11	1711288	121281	BC	NN	B01	M	U	D		UNIT 2 21? CHARGER TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
G	BP1	015248A	063076	BC	ST	B29	N		U		STATION BATTERY CHARGER FAILED	DEFECTIVE SILICON RECTIFIERS
G	BP1	017389	102177	BC	NN	B2206	B		U		BATT CHRGR DC OUTPT FUSE FAILD WHEN CHRG BATT 2B-?	HI CURR/TEMP CAUSD SOLDERD LINKG SEPARATE
G	CD1	0221018	062778	BC	NN	B2333	N		T		1A 250V BTTRY CHRGR TIE BREAKER TRIPPED	POOR CNNCTR CNTCTS IN CURRENT MODULE
G	CD1	0221018	062778	BC	NN	B3304	N	U	D		1A 250V BTTRY CHRGR INPUT BREAKER TRIPPED	LOOSE CNNCTN AT CHRGR INPUT BRKR PHASE A

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY COMPONENT

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	CO1	037646	050581	BC	SI	G29	B		U		HIGH RIPPLE FROM BATTERY CHARGER WHICH FAILED INV-	-ERTER 1A. FAILED SCR
G	DA1	171665	120881	BC	NN	E00	N		U		BATTERY CHARGER OUTPUT INCORRECT	UNKNOWN
G	DR1	0185538	072977	BC	FP	B22	N		U		FUSE FOUND BLOWN IN DIESEL FIRE PUMP BATTERY CHAR-	-GER.
G	DR3	0162658	101876	BC	NN	C00	A		U		CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"	UNKNOWN CAUSE
G	EN1	021475*	060478	BC	SI	M1304	M		D	2	HEAT-SENSITIVE XSTR ON BATT CHRGR FIRING MODUL CRD	SHOULD BE A NON-HEAT-SENSITIVE TRANSISTOR
G	EN2	030651*	032580	BC	SI	A2122	G		U	2	EMER STATION BATT CHRGR 2G,2J FAILD TO HOLD LOAD	VOLTG CNTRL & CURR LMT MODULES TUNED
G	EN2	0307111A	032780	BC	SI	A29	G		U	2	STATION BATT CHRG 2A,2B FAILED TO MAINTAIN LOADS	SILICON CNTRL RECTIFIERS NEED LOAD BALANC
G	EN2	0307111B	032780	BC	SI	A22	G		U		STATION BATT CHRG 2C FAILED TO MAINTAIN LOAD	CURRENT LIMIT MODULE NEEDED ADJUSTMENT
G	EN2	0329818	032381	BC	NN	B00	N		U		24/48 VDC BATTERY CHARGER FOUND NOT CHARGHING	NO CAUSE GIVEN
G	MO1	1667308	061581	BC	NN	B01	A	U	D		TEMPORARY BATTERY CHARGER TAKEN OUT OF SERVICE	PERSONNEL ERROR,CAUSED BTTRY TO DISCHARGE
G	OC1	0182938	062877	BC	SY	B2713	U		U		BATTERY CHARGER FOR SWITCHING STATION BATTERY FOU-	-ND OOS AFTER 11 DAYS
G	PI1	027950A	122379	BC	SY	B00	U	R	U		SWITCHYARD 125 VDC BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	PI1	027950B	122479	BC	SY	B00	N	R	U		SWITCHYARD 125 VDC BACKUP BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	PI1	033899	082180	BC	NN	B2113	M		U		"A" 125 VDC CONTROL BATT CHARGER INOPERABLE	VOLTAGE REGULATOR ELECTRONIC MODULES FAIL
G	QC2	018164	031777	BC	NN	C23	U		U		UNITS BATTERY CHARGER APPARENTLY INOPERABLE	FAULTY INDUCTIVE CURRENT CONTROL CIRCUIT
G	QC2	018460	060977	BC	NN	E2101	N	U	D		BATTERY CHARGER SUPPLYING CURRENT TO BATTERY FOUN-	-D LOW. FLOATING POTENTIOMETER SET LOW
G	VY1	0162178	101376	BC	UP	B21	N	R	U		CNTRL BTRY CHARGING POWER SUPPLY FAILED	INOPERATIVE VOLTAGE REGULATOR CIRCUIT
G	VY1	0184078	031877	BC	UP	B13	N		T		UPS-1B CONTROL CHARGING POWER SUPPLY FAILED	FAILED CAPACITOR IN ON/OFF CIRCUITRY
G	VY1	021749	061978	BC	NN	B06	N	S	D		AC INPUT BRKR TO CA1 BATT CHRGR TRPD OPEN	SPURIOUS TRP OF AC BRKR IN AN ELEC STORM
G	VY1	025519	031779	BC	UP	B00	N		U		CONTROL CHARGING POWER SUPPLY FAILED	NO CAUSE GIVEN. CAUSED BATTERIES DISCHR

APPENDIX E

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY SYSTEM

CODES USED IN LER ONE-LINE DESCRIPTIONS

NSSS VENDOR

CODE	DESCRIPTION
B	BABCOCK & WILCOX
C	COMBUSTION ENGINEERING
W	WESTINGHOUSE
G	GENERAL ELECTRIC

EVENT CLASSIFICATION

CODE	DESCRIPTION
D	FREQUENCY
T	AGE
U	UNKNOWN

COMPONENT

CODE	DESCRIPTION
BA	BATTERY
BC	BATTERY CHARGER

FAILURE CAUSE

CODE	DESCRIPTION
00	UNKNOWN
01	PERSONNEL OPERATION
02	PERSONNEL MAINTENANCE
03	PERSONNEL TESTING
04	DESIGN/FABRICATION/CONSTRUCTION/QUALITY CONTROL
05	DEFECTIVE PROCEDURES
06	EXTREME ENVIRONMENT
08	CORROSION
10	NORMAL WEAR/NATURAL END OF LIFE
11	ELECTRICAL MALFUNCTION
12	MECHANICAL MALFUNCTION
13	PIECE PART FAILURE
14	LOW SPECIFIC GRAVITY
15	STRATIFICATION
16	HIGH ELECTROLYTE SOLUTION LEVEL
17	LOW ELECTROLYTE SOLUTION LEVEL
18	INSUFFICIENT CHARGE
20	DEFECTIVE/WEAK CELLS
21	VOLTAGE REGULATOR MALFUNCTION
22	CURRENT LIMITER MALFUNCTION
23	CURRENT CONTROLLER MALFUNCTION
24	VOLTAGE LIMITER MALFUNCTION
25	THERMAL OVERLOAD PROTECTION
26	COOLING FAN/VENTILATION MALFUNCTION
27	CHARGE CONTROL MALFUNCTION
28	CHARGE CONTROL TIMER MALFUNCTION
29	RECTIFIER PROBLEM
30	SHORT CIRCUIT
32	ELECTROLYTE DILUTION
33	FAULTY CABLE/CONNECTORS
34	CHARGER MALFUNCTION

FAILURE MODE

CODE	DESCRIPTION
A	REDUCED CAPABILITY
B	NO OUTPUT
C	UNKNOWN/UNSPECIFIED/OTHER
D	HIGH CURRENT/VOLTAGE OUTPUT
E	LOW OUTPUT VOLTAGE
G	HIGH AC RIPPLE ON DC OUTPUT
M	MAINTENANCE REPLACEMENT
T	TEST NOT PERFORMED

TYPE EVENT

CODE	DESCRIPTION
B	RECURRING COMMON CAUSE
C	COMMON CAUSE
R	RECURRING
S	COMMAND FAULT
T	RECURRING COMMAND FAULT
U	COMMON CAUSE COMMAND FAULT
W	RECURRING COMMON CAUSE COMMAND FAULT
BLANK	RANDOM

ACTIVITY RESULTING IN DISCOVERY

CODE	DESCRIPTION
A	TESTING(UNSPECIFIED)
B	NORMAL LOAD TESTING
C	MONTHLY TESTING
D	WEEKLY TESTING
E	QUARTERLY TESTING
F	REFUELING TESTING
G	18 MONTH TESTING
H	5 YEAR TESTING
M	MAINTENANCE
N	NORMAL PLANT OPERATION
R	RECORDS REVIEW
U	UNKNOWN

FLAGGING FIELD

CODE	DESCRIPTION
A	FAILED COMPONENT CAUSED AN ACCIDENT
B	COMPONENT FAILED TO MITIGATE AN ACCIDENT
C	SAFETY SIGNIFICANT
D	FAIL # NOT KNOWN
E	CELL # NOT KNOWN
F	FAIL # AND CELL # NOT KNOWN
N	FROM NSIC DATA BASE

SYSTEM IDENTIFICATION CODES

CODE	DESCRIPTION
AM	AREA MONITOR SYSTEM
DB	EMERGENCY DIESEL GENERATOR
ES	ENGINEERED SAFETY FEATURE
FP	FIRE PROTECTION SYSTEM
FW	FEEDWATER SYSTEM
NM	NEUTRON MONITORING BATTERY
NN	UNKNOWN/UNSPECIFIED/OTHER
SA	AUTOMATIC (REACTOR) DEPRESSURIZATION (ADS)
SP	SPECIAL USE BATTERIES
ST	STATION BATTERIES/CHARGERS
SW	SERVICE WATER BUILDING BATTERIES/CHARGERS
SY	SWITCHYARD BATTERIES/CHARGERS
UP	UNINTERRUPTIBLE POWER SYSTEM (UPS)

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY SYSTEM

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	SA2	038683	090681	BA	AM	B00	N		U		RAD MONITOR 2R12A BATTERY PACK FAILED	NO CAUSE GIVEN
W	NA1	026565	062879	BA	DB	T05	R	U	D		7 DAY SURVEILLANCE OF EMERGENCY DIESEL GENERATOR -	-BATTERIES EXCEEDED INTERVAL. PROCEDURAL
W	NA1	026656	073179	BA	DB	T05	R	U	D		DIESEL GENERATOR BATTERIES SURVEILLANCE NOT DONE	TIME LAG IN IMPLEMENTING NEW PROCEDURES
W	NA1	171672	120161	BA	DB	A1410	A		T		1J EMERGENCY D/G INOP CELL S.G. BELOW 1.2	D/G BATTERY NEAR END OF USEFUL LIFE
W	NA2	036466*	021881	BA	DB	M14	E		U	2	BATTERIES FOR 2J & 2H DIESEL GENERATORS FAILED SU-	-RVEILLANCE TEST. 4 CELLS REPLACED
W	NA2	036417	022081	BA	DB	T05	R	U	D		DATA FROM TWO TESTS ON 2J DIESEL BATTERY FOUND NO-	-T USABLE. NOT COMPARED WITH INITIAL CON
W	SE1	032338	080780	BA	DB	B30	N		U		D/G BTTRY 1B-B CELL 51 SHORTED AND FAILED	NO CAUSE GIVEN
W	SE1	032342A	081280	BA	DB	B05	U		D		D/G BTTRY 1B-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	SE1	032342B	081380	BA	DB	B05	U		D		D/G BTTRY 1B-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	TR1	014563	032476	BA	ES	T05	R	U	D		ESF DC PWR SUPPLIES SURV REQ PERFORMD AT WRNG FREQ	PROCEDURE DID NOT USE FREQ REQ BY T.S.
B	DB1	021587	042778	BA	FP	A17	N		U		4 CELLS OF ENGINE BTTRY W/ ELECTROLYTE BELOW PLATE	ELEC. ADDED BROUGHT CELLS UP TO NORMAL
B	DB1	025397	020879	BA	FP	A17	D		U		ELECTROL LEVEL IN 4 CELLS FOUND LO IN DSL ENG STA-	-RTING BTTRY. DIESEL STILL STARTED
W	PR1	026268	053179	BA	FP	T05	R	U	D		DIESEL DRIVEN WEEKLY BATTERY INSPECTION NOT DONE	PROCEDURES WERE DEFECTIVE
W	SA1	032162	072180	BA	FP	T02	R	U	D		92 DAY & 18 MON SURV NOT DONE ON 24 V STARTG BATT	ELECTRICIAN NOT COMPLETING JOB
W	SA1	038834	091881	BA	FP	B33	N		U		BATTERY CABLE CLAMP FOUND ARCING AND CRACKED	CLAMP WAS REPLACED ON #2 FIRE PUMP BTTRY
W	SU2	169141	081981	BC	FP	B13	N		U		SMOKE DET SYS INOP BTTRY CHRGR LOST POWER	FAULTY POWER SUPPLY CARD IN CHARGER
W	SU2	038470	090681	BA	FP	B00	U		U		SOMKE DETECTOR BATERY FOUND NOT TO TAKE A CHARGE	NO CAUSE GIVEN
W	SU2	038936A	100181	BA	FP	B34	A		D		SMOKE DETECTOR BATTERY FAILED	CHARGER NOT CHARGING BATTERY
W	SU2	038936B	100181	BC	FP	B00	A		U		BATTERY CHARGER FOR SMOKE DETECTOR BATTERY FAILED	NO CAUSE GIVEN
W	TR1	032622	090380	BA	FW	B20	N		U		DIESEL-DRIVEN AFWP FAILD TO START FROM MANUAL SIG	FAILED STARTING BATTERY
B	CR3	017166A	011277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166B	020277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166C	020977	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	021165	040578	BA	NN	T02	R	V	D		WRONG BTTRY CELLS MONITORED FOR WEEKLY BATT SURV	PERSONNEL NOT FOLLOWING PROCEDURES
B	DE3	015532	081876	BA	NN	T05	R	U	D		125-VDC INSTR & CNTRL BATTERIES NOT LOAD TESTED	DFCTV PROC: WRONG DATA IN SURV PRINTOUT
B	DE3	022183	072778	BA	NN	B33	B		U		SMOKE FROM 1 TERMINAL OF I&C BATTERY 3C8	TERMINAL DFCTV/CNNCTNS FOUND DEFECTIVE
B	TI2	023084*	111278	BC	NN	B13	B		U	2	CHRGRS 2-2A/B FUSE BLEW NO CHRGR FOR BANK 2-2SB	DEFECTIVE GATING FILTER MODULES
C	AR2	026904	080979	BC	NN	B1306	N	C	D		BATTERY CHARGER 2031 FAILED. DC OUTPUT LAMP SOCK-	-ET BURNED UP DUE TO HIGH HEAT,VOLT,OUTP
C	AR2	027808	121179	BC	NN	B21	N	S	D		BATTERY CHARGER 2032 AC BREAKER TRIPPED	CURRENT SURGED WHEN SHIFTING TO FLOAT
C	AR2	039245*	110581	BC	NN	B00	N		U	2	OUTPUT BREAKER OF BATTERY CHARGER 2D34 TRIPPED OP-	-EN TWICE. NO CAUSE COULD BE FOUND
C	CC1	021533	050378	BA	NN	A00	A		U		125 VDC BTTRY 22 CELL 54 ICV BELOW MIN VOLTAGE	CAUSE UNKNOWN
C	CC1	037262	050681	BA	NN	M20	A		U		VOLT OF CELL 18 OF 125 VDC BATTERY 12 FOUND .ORV -	-BELOW MINIMUM. FULL CAPACITY AVAILABLE

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY SYSTEM

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
C	CC2	017344	021777	BA	NN	B01	N	S	D		#11 125 VDC BATTERY INADVERTENTLY TAKEN OUT OF SE-	-RVICE. SUPERVISOR GAVE PERMISSION
C	MI2	026979	080379	BA	NN	M20	A		U		VARIOUS CELLS REPLACED IN 2018 BTTRY (4 CELLS)	REDUCTION IN CELL VOLT. FULL CAPACITY
C	PA1	016178	102076	BC	NN	E2201	N		D		DC BUS-2 VOLTG FELL;VOLTS ON ASSOC AC BUSES FELL	CURR LMTR & OUTPUT BRKR SETTING ERRONEOUS
C	SL1	020069	121677	BC	NN	B00	N		D		OUTPUT LOST FROM "AB" BATTERY CHARGER	POWER SUPPLY BKR TRIPPED FOR NO REASON
C	SL1	037962	062481	BC	NN	T02	R	U	D		SURVEILLANCE REQUIREMENTS NOT MET ON "AB" BATTERY-	-CHARGER. MISINTERPRETATION OF TECH SPEC
C	SL1	038775	091881	BC	NN	B24	A	R	U		1A BATTERY CHARGER SHUTDOWN ON HIGH VOLTAGE	HIGH VOLTAGE DEVICE FOUND DEFECTIVE
W	BV1	016357	102476	BA	NN	M00	A		U		VOLTAGE DECREASED IN CELL 48 BY MORE THAN 0.05V	UNKNOWN. CELL 48 FROM BTTRY 3, 1650 A.H.
W	BV1	021043	032078	BC	NN	E2713	N		U		DECR IN DC BUS VOLTAGE DUE TO A FAULTY BTTRY CHRGR	FAILD COLLECTR RESISTR IN CHRGR CNTRL CKT
W	BV1	028147	092179	BA	NN	M2010	A		T		CELL #6 OF BATTERY NO. 1 COULD NOT HOLD ORIGINAL -	-VOLTAGE. FULL BATTERY CAPACITY AVAIL.
W	BV1	037757	061581	BC	NN	B250[illegible]	N	R	D		#2 BATTERY CHARGER OUTPUT BREAKER FAILED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAD
W	BV1	038347	080581	BC	NN	B2506	N	R	D		#2 BATTERY CHARGER OUTPUT BREAKER TRIPPED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAD
W	BV1	039154	101781	BA	NN	M20	E	R			2 OF 60 CELLS VOLTAGE FOUND DROPPED BY .05 VDC	NO CAUSE GIVEN,BATTRY HAD FULL CAPACITY
W	DC1	025643	032379	BC	NN	D01	N	U	D		125 VDC EQUALIZING CHARGE TOO HIGH, FAILED INVERT-	-ER, CAUSED SCRAM AND SI. NO CAUSE
W	DC2	021633	060778	BA	NN	A14	A		U		CD PLANT BTTRY CELL 89 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	DC2	021632	061578	BA	NN	A14	A		U		AB PLANT BTTRY CELL 35 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	DC2	039127	101981	BA	NN	T05	R	U	D		SURVEILLANCE NOT PERFORMED ON "N" TRAIN BATTERY	PROCEDURE LACKED SIGNOFF
W	HN1	014608A	042576	BC	NN	D2833	N		U		BTTRY CHARGER A WENT INTO OVERCHARGE	FAULTY CNTCT ON CHARGER CONTROL TIMER
W	HN1	0146088	042576	BC	NN	D2122	N		U		VOLTG REG SPIKING TO 200 AMPS THEN SHUTTING OFF	FAULTY PHASING CRD IN CURRENT LIMITER CKT
W	IP3	014709	051076	BC	NN	B2630	A		U		BTTRY CHRGR TROUBLE ALARMED CHARGER FAN HAD TRPD	AC FAN MTR INOP EXPOSED WIRE BLEW A FUSE
W	IP3	015138	060876	BC	NN	B13	A	S	U		# 31 BTTRY CHRGR AC BRKR TRIPD BATT CHRGR INOP	PRESSURE SENSOR FAILED TRIPPING BREAKER
W	IP3	036207	012481	BC	NN	B2123	N		U		OUTPUT FROM CHARGER #32 DISCOVERED DROPPING	VOLTAGE AND CURRENT CONTROLLER REPLACED
W	IP3	038257	070681	BC	NN	B13	N	S	U		BATTERY CHARGER #32 DISCOVERED TRIPPED	FAILED DP AIR FLOW SENSOR SWITCH
W	JF1	027181	090679	BA	NN	T03	R	U	D		QUARTERLY AUXILIARY BUILDING BATTERY VERIFICATION-	-NOT PERFORMED ON TIME. PERSONNEL
W	PR1	033222	110580	BC	NN	A2911	A		U		#12 BTTRY CHRGR FAILD TO PROVIDE NORMAL OUTPUT	FIRING CARD B NOT PROVIDING PULSE TO SCR
W	PR2	014599	041476	BC	NN	B2133	B		U		#12 BATTERY CHARGER FAILED DISABLED "B" DC POWER	VOLTAGE CNTRL CRD LOOSE IN ITS SOCKET
W	RO2	015515	071076	BA	NN	B02	M		D		BATTERY B LEADS WERE REMOVED RENDERING BATT INOP	PERS FAILED TO COMPLY W/ T.S. 3.7
W	SA1	020738A	020178	BA	NN	A34	N		U		1C 125V BATTERY VOLTAGE LOW	1C1,1C2 BATT CHARGER D.C. BRKRS TRPD
W	SA1	020738B	020178	BC	NN	B00	N		U	2	1C1,1C2 BATT CHARGER D.C. BRKRS TRIPPED	UNKNOWN CAUSE
W	SA2	038319	072481	BC	NN	B2101	N	U	D		2C1 BATTERY CHARGER DISCOVERED TRIPPED. VOLTAGE -	-SETTING WAS INCORRECTLY SET
W	SA2	038327	081281	BC	NN	B24	N		U		2B1 BATTERY CHARGER WOULD NOT PICK UP 28 VDC LOAD	HIGH VOLTAGE CUT-OUT ACTUATED
W	TR1	020885	031778	BA	NN	T02	R	U	D		125 VDC ELECTRICAL SYS OP NOT VERIFIED WK OF 2-26	MAINT PERS FAILD TO INSURE SURV COMPLETED
W	TR1	025211A	011979	BA	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY SYSTEM

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	TR1	0252118	011979	BC	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TU3	033530A	121180	BC	NN	C00	N		U		PROBLEMS WITH 4B 125 VDC BATTERY CHARGER	NO CAUSE GIVEN
W	TU3	0335308	121180	BA	NN	T34	N	U	T		4B 125 VDC BATT OOS,TECH SPEC EXCEEDED	PROBLEM W/ ASSOCIATED BTTRY CHARGER
W	TU3	039363	111281	BA	NN	B20	A	R	U		"3A" 125 VDC FAILED TO HOLD A CHARGE	BEING EVALUATED W/ MANUFACTURER
W	YR1	0194764	101477	BC	NN	B1210	N	R	T		NO. 2 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING
W	YR1	0194768	101477	BC	NN	T01 .	N	U	D		NO. 1 BATTERY CHARGER CROSS TIED TO NO. 2 BATTERY	OVERSIGHT CAUSE LCO STATED IN TECH SPEC
W	YR1	019640	110577	BC	NN	B1210	N	R	T		NO. 1 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING DUE TO NORMAL WEAR
W	ZI1	171128A	121281	BA	NN	B01	M	U	D		UNIT 2 212 BATTERY TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
W	ZI1	1711288	121281	BC	NN	B01	M	U	D		UNIT 2 212 CHARGER TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
W	ZI1	172130	121581	BA	NN	C05	U	U	D		EQUALIZING CHARGE NOT PLACED ON BATTERY 112	PROCEDURE NOT CLEAR ON COMMUNICATIONS
B	CP3	038100	071481	BA	ST	B3002	N	C	D		STATION BATTERY SHORTED DURING MAINTENANCE	PERSONNEL ERROR. CAUSED REACTOR TRIP
B	DB1	020448	011978	BA	ST	A1415	E		U		1N BTTRY CELL 32 ELECTROLYTE S.G. DECRS .003 OOT	ELEC. STRAT. DUE TO LO BTTRY LOADING
B	DB1	022362	090578	BA	ST	T02	R	U	D		STATION BATTERIES WKLY SURV TEST NOT DONE ON TIME	MISUNDERSTANDING BTWN PERSONNEL
C	AR2	026489	052279	BA	ST	T03	R	U	D		SURVEILLANCE NOT PERFORMED ON STATION BATTERIES	PERSONNEL OVERSIGHT
C	PA1	025917	040479	BA	ST	B2005	A	C	D		2 CELLS IN STATION BATTERY #2 BURST WHILE TAKING -	-VOLTAGE READINGS. FULL CAPACITY AVAL
C	PA1	036000*	010681	BA	ST	B02	U	U	D	2	OUTPUT BREAKER FOR BOTH STATION BATTERIES WERE OP-	-ENED FOR 1 HOUR. PERSONNEL ERROR
W	BV1	0171194	020477	BA	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON #3 & #4 STATIO-	-N BATTERIES. PERSONNEL ERROR
W	BV1	0171198	020477	BC	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON CHARGERS ASSOC-	-IATED WITH #3 & #4 STATION BTTRY. PERSON
W	BV1	022136	080478	BC	ST	B00	D		U		#4 STATION BTTRY CHRGR OUTPUT BRKR TRIPPED	IMPROPR OP OF CKTBRK.CAUSE OF TRP UNKNOWN
W	BV1	038825	091081	BC	ST	B33	N		U		#4 STATION BATTERY CHARGER TAKEN OUT OF SERVICE	BAD ELECTRICAL CONNECTION IN OUTPUT
W	MG1	039186	101981	BA	ST	A3308	M		T		CELL TO CELL RESISTANCE IN 3 CELLS FOUND HIGH	CORROSION OF TERMINAL CONNECTIONS
W	NA1	036491A	022881	BA	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	NA1	036491B	022881	BC	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-A SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	PR1	030917	033180	BA	ST	T02	R	U	D		INDIVIDUAL FLOAT CELL VOLT MEAS NOT DONE IN STATI-	-ON BATTERY TEST. PERSONNEL OVERSIGHT
W	RD2	021898	071678	BA	ST	B3311	N		D		PLASTIC TOP OF 2 STATN "A" BATT CELLS ON FIRE	RESISTANC HEATG OF STRAP-CELL TERMINAL
W	TU3	022061A	122277	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	TU3	0220618	122977	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	YP1	019861	120577	BA	ST	A20	E		U		CELL VOLTAGE ON CELL 18 OF BANK 1 FOUND LOW	NO CAUSE FOUND,CELL REPLACED
W	JF1	021235A	041878	BA	SW	B00	E		U		2 CELLS IN SW BLDG "A" BATT BANK 1 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	JF1	0212358	041878	BA	SW	B00	E		U		2 CELLS IN SW BLDG B BATT BANK 2 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	JF1	032332A	081280	BA	SW	A14	A	R	U		SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	BATT PLACED ON EQUALIZE & S.G. ACCEPTABLE
W	JF1	0323328	082580	BA	SW	A14	A	R	U		SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	NO EXTERNAL CAUSE FOR LOW SPECIFIC GRAV

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY SYSTEM

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	JF1	032504	082580	BC	SW	B24	M	S	U		SW B DC DISTRIBUTION SYS INOP NO OUTPUT FROM BATT-	-CHRGR 4. HV S/D RELAY ACTUATED
W	JF1	032687	091180	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LO BATT CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033007	102180	BA	SW	A1404	A		D		SW "A" BTTRY SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033163	102980	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM PROX/ACID RES/POST SEAL DESIGN
G	EN2	032981A	032381	BA	AM	B1834	N		D		POST TREATMENT MON 2D11-K615A BATTERY DRAINED	BATTERY CHARGER 2AB 24/48 VDC FAILED
G	BP1	015444	081276	BA	DB	B33	N		T		EMERGENCY DIESEL GENERATOR DID NOT START DUE TO L-	-OOSE BATTERY CONNECTION.
G	EN1	021719	062778	BA	DB	T02	R	U	D		WKLY PILOT CELL SURV OF 1C D/G BTTRY NOT COMPLET--	ED ON TIME. PERSONNEL OVERSIGHT
G	EN2	036943C	040781	BA	DB	A1602	N	C	D		ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF DIF-	-SEL GENERATOR BATTERY. PERSONNEL ERROR
G	EN2	036943D	040781	BA	DB	A1702	N	C	D		ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF DIES-	-EL GENERATOR BATTERY. PERSONNEL ERROR
G	DC1	021497A	052478	BA	DB	T01	R	U	D		D/G BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	DC1	023298A	121378	BA	DB	T01	R	U	D		D/G BTTRY NOT TESTED/MONITORED W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	DC1	030599B	022880	BA	DB	T02	R	U	D		DIESEL GENERATOR BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	BP1	019025A	082977	BA	FP	B3302	N		D		DIESEL FIRE PUMP "A" BATTERY FOUND WITH NO OUTPUT	CONNECTORS NOT TIGHTENED
G	BP1	019025B	082977	BA	FP	B00	N		U		DIESEL FIRE PUMP "B" BATTERY FOUND FAILED WITH NO-	-OUTPUT. DISCHR WITH NO APPARENT CAUSE
G	BP1	021307	050478	BA	FP	A17	D		U		FIRE PUMP DIESEL STARTG BTTRY A CELLS 1,3,5 LO --	ELECTROLYTE SOLN. EXACT CAUSE UNKNOWN
G	BP1	021519	052578	BA	FP	A1705	D		D		FIRE PUMP DIESEL STARTG BTTRY "A" CELLS 2,4,6 LO--	ELECTROLYTE SOLN. INADQ MAINTENANCE PROC
G	DR1	018553A	072977	BA	FP	B3413	N	C	D	2	DIESEL FIRE PUMP BATTERIES FAILED TO START DIESEL	FAILED FUSE FROM BATTERY CHARGER CIRCUIT
G	DR1	018553B	072977	BC	FP	B22	N		U		FUSE FOUND BLOWN IN DIESEL FIRE PUMP BATTERY CHAR-	-GER.
G	FP1	021433	053178	BA	FP	A1420	A		U		LO S.G. OF BTTRY A2 CELL 1	BAD CELL IN BATTERY
G	FP1	031743*	062880	BA	FP	A14	A		T	2	DIESEL FIRE PUMP 24V BATT CELLS A2-6,B2-1 LOW S.G.	CHARGER OOS DURING SURVEILLANCE
G	BF2	015394	070976	BA	NM	B3302	M	U	D		NEUTRON MONITORING BATTERY 2A MADE INOPERABLE	CNNCTR BROKEN OFF A CELL POST PERS ERROR
G	FP1	171811	123061	BA	NM	B18	N		D	2	LOW VOLTAGE FROM DIVISION I 24 VCDC BATTERIES,CAUS	-ED ERRATIC READINGS ON LRM & SRM INST
G	BF1	038085	072281	BA	NN	A20	U		U		250 VOLT MAIN BATTERY TAKEN OOS TO BYPASS A CRACK-	-ED CELL.
G	BP1	033637	122380	BA	NN	T02	R	U	D		DC BATTERY MONTHLY TESTS OVERDUE	INADQ ADMIN CONTROLS & PERSONNEL ERROR
G	BR1	019389	102177	BC	NN	B2206	B		U		BATT CHRGR DC OUTPT FUSE FAILD WHEN CHRG BATT 2B-2	HI CURR/TEMP CAUSD SOLDERD LINKG SEPARATE
G	BR1	025637A	032579	BA	NN	A3308	B	R	T		BATTERY 182 VOLTAGE FELL TO 102.5V THEN ROSE TO -	-118V. CORRODED AND LOOSE BTTRY CONNECT
G	BR1	025637B	032779	BA	NN	A3308	B	R	T		BTTRY 181 VOLTAGE FELL TO 96.8V THEN ROSE TO 118V	CORRODED AND LOOSE BTTRY CONNECTORS
G	BR2	014051	021276	BA	NN	T05	R	U	D		MONTHLY INSTEAD OF QUARTERLY BATTERY P.T. PERFORMD	WRONG P.T. SCHEDULED BY MISTAKE
G	CG1	022101A	062778	BC	NN	B2333	N		T		1A 250V BTTRY CHRGR TIE BREAKER TRIPPED	POOR CNNCTR CNTCTS IN CURRENT MODULE
G	CU1	0221018	062778	BC	NN	B3304	N	U	D		1A 250V BTTRY CHRGR INPUT BREAKER TRIPPED	LOOSE CNNCTN AT CHRGR INPUT BRKR PHASE A
G	DA1	030982	041780	BA	NN	T02	R	U	D		WKLY BATT SURV DOCUMENTATION NOT COMPLETED	PERSONNEL ERROR-NONLIC. OPERATIONS PERS
G	DA1	171665	120881	BC	NN	E00	N		U		BATTERY CHARGER OUTPUT INCORRECT	UNKNOWN

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY SYSTEM

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILED CODES	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	DR2	039116	102181	BA	NN	T01	R	U	D		QUARTERLY STORAGE BATTERY SURVEILLANCE DONE 1 DAY-	-S LATE. OVERSIGHT BY OPERATING SHIFT
G	DR3	016265A	101876	BA	NN	A34	A		D		BATTERY IN A DEGRADED CONDITION	CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"
G	DR3	016265B	101876	BC	NN	C00	A		U		CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"	UNKNOWN CAUSE
G	DR3	020853	032878	BA	NN	A10	F	R	T		24/48 V BTTRY FAILED THE REFUELING OUTAGE DISCHRG-	-TEST. 4 CELLS REPLCD NAT'L END OF LIFE
G	DR3	025951	042479	BA	NN	B01	N	U	D		UNIT 2'S BATTERY NOT RETURNED TO NORMAL LINEUP	BREAKER COULD HAVE BEEN SHUT AT ANY TIME
G	DR3	036569	030381	BA	NN	T01	R	U	D		WEEKLY STORAGE BATTERY SURVEILLANCE DONE 4 DAYS L-	-ATE. OVERSIGHT BY OPERATING SHIFT
G	EN1	027782	112679	BA	NN	T03	R	U	D		CELL SU VEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	EN2	022208	081678	BA	NN	T02	R	U	D		WKLY PILOT CELL SURV OF PLANT BATT NOT COMPLETED--	ON TIME. NOTICES ROUTED TO ABSENT PERS
G	EN2	026657	071879	BA	NN	T03	R	V	D		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	EN2	032981R	032381	BC	NN	B00	N		U		24/48 VDC BATTERY CHARGER FOUND NOT CHARGHING	NO CAUSE GIVEN
G	MO1	166730A	061581	BA	NN	A3401	A		D		250 VDC BATTERY INADVERTENTLY DISCHARGED	PERS DISCONNECTED TEMP BATTERY CHARGER
G	MO1	166730B	061581	BC	NN	B01	A	U	D		TEMPORARY BATTERY CHARGER TAKEN OUT OF SERVICE	PERSONNEL ERROR,CAUSED BTTRY TO DISCHARGE
G	OC1	038737	091181	BA	NN	T02	R	U	D		BATTERY SURVEILLANCE PROCEDURES FOUND NOT TO FULL-	-Y COMPLY WITH NEW REQUIREMENTS.
G	PR3	014211	012976	BA	NN	A14	B		U		B BTTRY CAPACITY BELOW DESIGN	CELL S.G. IN LO RNG, PARTIAL ACID RPLCD
G	PI1	033899	082180	BC	NN	B2113	N		U		"A" 125 VDC CONTROL BATT CHARGER INOPERABLE	VOLTAGE REGULATOR ELECTRONIC MODULES RPLC
G	OC1	019222	092477	BA	NN	M2010	U		T		BATTERY SYSTEM TAKEN OUT OF SERVICE	REPLACED 12 WEAK CELLS,NORMAL END OF LIFE
G	QC2	018164	031777	BC	NN	C23	U		U		UNITS BATTERY CHARGER APPARENTLY INOPERABLE	FAULTY INDUCTIVE CURRENT CONTROL CIRCUIT
G	QC2	018460	060977	BC	NN	E2101	N	U	D		BATTERY CHARGER SUPPLYING CURRENT TO BATTERY FOUN-	-D LOW. FLOATING POTENTIOMETER SET LOW
G	VY1	021749	061978	BC	NN	B06	N	S	D		AC INPUT BRKR TO CA1 BATT CHRGR TRPD OPEN	SPURIOUS TRP OF AC BRKR IN AN ELEC STORM
G	BP1	015326A	072276	BA	SA	A17	C		U		RDS BATTERY D PILOT CELL LOW ELECTROLYTE LEVEL	EXACT CAUSE UNKNOWN
G	BP1	015326B	072276	BA	SA	A1432	C		D		RDS BATTERY D PILOT CELL HAD LOW SPECIFIC GRAVITY	ADDITION OF WATER POSSIBLE CAUSE
G	BP1	015327A	072876	BA	SA	A17	C		U		RDS BTTRY C PILOT CELL LOW ELECTROLYTE LEVEL	UNKNOWN CAUSE
G	BP1	015327B	072976	BA	SA	T14	C	U	D		RDS BTTRY C PILOT CELL RDG LO SPECIFIC GRAVITY	DFCTV PROC SPECIFIC GRAVITY READ TOO SOON
G	BP1	016073B	100376	BA	SA	A17	A		U		RDS D BTTRY PILOT & 3 OTHER CELLS LO ELECTROLYTE -	-LEVEL. UNKNOWN CAUSE
G	BP1	016073A	100476	BA	SA	A1405	A		D		RDS D BTTRY PILOT & 3 OTHER CELLS LO SPEC GRAVITY	INCOMPLETE ELECTROLYTE MIXING
G	BP1	016305A	102176	BA	SA	A14	D		U		RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	016459	110476	BA	SA	A14	C		U		RDS B PILOT CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE
G	BP1	016305B	112176	BA	SA	A14	D		U		RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	016584	120276	BA	SA	A14	D		U		RDS B BTTRY PILOT CELL 27 LO SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	017023	120976	BA	SA	A14	D		U		RDS B ONE CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	017024*	010477	BA	SA	M14	A	R	U	2	B CELLS SPECIFIC GRAVITY FOUND BELOW 1.2. EVALUA-	-TION REVEALED ADEQUATE CAPACITY
G	BP1	017464	022477	BA	SA	M14	C	R	U		RDS BATTERY B H2O ONE CELL BELOW MINIMUM SPECIFIC-	-GRAVITY. ADEQUATE CAPACITY AVAILABLE

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY SYSTEM

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	BP1	017463	031777	BA	SA	M14	C	R	U		SPECIFIC GRAVITY FOUND LOW IN 5 CELLS OF RDS BTTRY-	-"A". ADEQUATE CAPACITY AVAILABLE
G	BP1	018096A	042177	BA	SA	M14	C	R	U		RDS BATTERY B,CELL 27 FOUND TO HAVE LOW SPECIFIC -	-GRAVITY OF 1.191. FULL CAPACITY AVAIL
G	BP1	018096B	042777	BA	SA	M14	C		U		SPECIFIC GRAVITY OF 10 MARGINAL CELLS ADJUSTED OF-	-RDS BATTERY B. FULL CAPACITY AVAILABLE
G	BP1	018462A	061677	BA	SA	A17	U	R	U		WATER ADDED TO CELL 27 OF RDS BATTERY "B"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	018462B	061677	BA	SA	T1432	C	V	D		SPECIFIC GRAVITY OF CELL 27 OF RDS BATTERY B LOW	WATER ADDED THEN TESTED TOO SOON
G	BP1	019472A	092977	BA	SA	A17	U	R	U		WATER ADDED TO CELL 12 OF RDS BATTERY "A"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	019472B	092977	BA	SA	A1432	C	R	D		SPECIFIC GRAVITY OF CELL 12 OF RDS BATTERY "A" LOW	WATER ADDED,CHARGE INSUFFICIENT TO MIX
G	BP1	019542A	100877	BA	SA	A17	U	R	U		WATER ADDED TO 3 CELLS OF RDS BATTERY "D"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	019542B	102077	BA	SA	A1432	C	R	D		SPECIFIC GRAVITY OF 3 CELLS OF RDS BATTERY "D" LOW	WATER ADDED,MIXING WAS INADEQUATE
G	BP1	020176	122277	BA	SA	A14	C	R	U		SPECIFIC GRAVITY ON RDS BATTERY "A",CELL 12 LOW	EQUALIZING CHARGE FOR 8 HOURS CORRECTED
G	BP1	022664	083178	BA	SA	A14	C	R	U		RDS BATTERY A, CELL 12 LO SPECIFIC GRAVITY READING	EXACT CAUSE UNKNOWN
G	BP1	027985	110179	BA	SA	A1420	C		U		SPECIFIC GRAVITY OF CELL 48 OF RDS BATTERY C LOW	CELL REPLACED,WOULD NOT TAKE EQUAL CHARGE
G	BP1	030237	012480	BA	SA	A1420	C		U		RDS C BTTRY CELL 14 LOW SPECIFIC GRAVITY RDG	DEFECTIVE CELL REPLACED
G	BP1	031176	050180	BA	SA	A1420	C		U		RDS BTTRY "A" CELL 2 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BP1	031848	071080	BA	SA	A1420	C		U		RDS C BTTRY CELLS 35,54 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BP1	032023	071880	BA	SA	A20	D		U		RDS C BTTRY PILOT CELL UNIT-9 INTERNAL RESISTANCE-	-INCRS. CAUSE UNKNOWN
G	BP1	032297	080780	BA	SA	A14	C		U		RDS C BTTRY CELLS 38,39,56 LOW SPECIFIC GRAVITY	VENDOR RECOM INCRS IN FLOAT VOLTAGE LEVEL
G	BP1	032656	091180	BA	SA	A1420	C		U		RDS D BATTERY CELL 12 LOW SPECIFIC GRAVITY RDG	CELL DID NOT ADQ RESPOND TO EQUALIZG CHRG
G	BP1	033544	121180	BA	SA	A1402	C		D		21 CELLS OF RDS "A" BATTERY LOW SPECIFIC GRAVITY	CELL TERMINALS INADQ CLEANED BY MAINT PER
G	BP1	037338	010281	BA	SA	A1420	C	R	U		RDS CH D BATTERY CELL 56 HAD LOW SG,WOULD NOT RES-	-POND TO EQUALIZING CHARGE.
G	BP1	038112	081581	BA	SA	A1602	A	C	D		FOUND PILOT CELL IN CH A RDS POWER SUPPLY WITH A -	-HIGH ELEC LEVEL. POSSIBLY OVERFILLED
G	BP1	038785	091581	BA	SA	A1420	C		U		"A" RDS BTTRY CELL #5 LOW SPECIFIC GRAVITY	CELL DIDN'T RESPOND ADQ TO EQUALIZG CHRG
G	BP2	025671	041979	BA	SP	B3302	N	C	D		BROKEN TERMINAL DISCOVERED ON S/D BOARD "D" BTTRY	PERSONNEL ERROR. ALSO AFFECTED UNIT 1
G	BP1	015248A	063076	BC	ST	B29	N		U		STATION BATTERY CHARGER FAILED	DEFECTIVE SILICON RECTIFIERS
G	BP1	015248B	063076	BA	ST	A18	N		D		LOAD ON BTTRY REDUCED VOLTAGE & SPECIFIC GRAVITY	STATION BATTRY CHARGER HAD FAILED
G	BP1	038592	083181	BA	ST	A2014	C	C	D		LOW SG IN CELL 43 OF ST BTTRY,CELL FOUND CRACKED.-	-THIS LEAD TO DILUTION.CRACKED WHEN MOVED
G	CO1	037646	050581	BC	ST	G29	B		U		HIGH RIPPLE FROM BATTERY CHARGER WHICH FAILED INV-	-ERTER 1A. FAILED SCR
G	CO1	037938	052081	BA	ST	T03	R	U	D		SG TESTS FOR 125V 1AEB AND 250V 1B NOT PERFORMED -	-PROPERLY. PERSONNEL USED WRONG HYDROM
G	EN1	021475*	060478	BC	ST	M1304	M		D	2	HEAT-SENSITIVE XSTR ON BATT CHRGR FIRING MODULE CRD	SHOULD BE A NON-HEAT-SENSITIVE TRANSISTOR
G	EN2	030651*	032580	BC	ST	A2122	G		U	2	EMER STATION BATT CHRGR 2G,2J FAILD TO HOLD LOAD	VOLTG CNTRL & CURR LMT MODULES TUNED
G	EN2	030711A	032780	BC	ST	A29	G		U	2	STATION BATT CHRG 2A,2B FAILED TO MAINTAIN LOADS	SILICON CNTRL RECTIFIERS NEED LOAD BALANC
G	EN2	030711B	032780	BC	ST	A22	G		U		STATION BATT CHRG 2C FAILED TO MAINTAIN LOAD	CURRENT LIMIT MODULE NEEDED ADJUSTMENT

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY SYSTEM

NSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	EN2	033891	081180	BA	ST	B30	M		U		DC BATT GROUND ON 2B STATION SERVICE BATTERY	NO CAUSE GIVEN
G	EN2	036943A	040781	BA	ST	A1602	N	C	D	2	ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF ST -	-BTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943B	040781	BA	ST	A1702	N	C	D	2	ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF ST B-	-TTRYS 2R42-S001A&B. PERSONNEL ERROR
G	FP1	019457	102077	BA	ST	A20	U		U		STATION BATTERY "B" FOUND TO HAVE CRACKED CELL	NO CAUSE KNOWN FOR CRACKED CELL #228
G	FP1	026922	090479	BA	ST	A20	N		U		LEAKING CELL NOTED IN BATTERY "B". BATTERY TEMPOR-	-ARILY INOP WHILE CELL JUMPERED
G	FP1	033280	111780	BA	ST	A10	N		T		STATION BTTRY B MADE INOP TO JUMP A CELL	CELL #8 POOR PERFORMANCE DUE TO AGE
G	OC1	021497B	052478	BA	ST	T01	N	U	D		STATION BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	023298B	121378	BA	ST	T01	R	U	D		STATION BTTRY NOT TEST/MONITOR W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	030599A	022880	BA	ST	T02	R	U	D		MAIN STATION BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	MI1	014478	040776	BA	SY	T01	R	U	D		SWITCHYARD BTTRY SURVEILLANCE NOT PERFORMED W/IN--	REQ TIME PERIOD. PERSONNEL ERROR
G	OC1	018293A	062877	BA	SY	B34	U	C	D		ONE OF TWO SWITCHING STATION BATTERIES FOUND OOS -	-FOR 11 DAYS. BATTERY CHARGER FAILED
G	OC1	0182938	062877	BC	SY	B2713	U		U		BATTERY CHARGER FOR SWITCHING STATION BATTERY FOU-	-ND OOS AFTER 11 DAYS
G	PI1	027950A	122379	BC	SY	B00	U	R	U		SWITCHYARD 125 VDC BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	PI1	027950B	122479	BC	SY	B00	N	R	U		SWITCHYARD 125 VDC BACKUP BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	BP1	017704*	033077	BA	UP	B3304	N	C	D	4	NO OUTPUT FROM ALL UPS BATTERY BANKS	CONNECTORS NOT TIGHTENED DURING INSTAL
G	VY1	016217A	101376	BA	UP	A34	N	R	U		UPS-1B CNTRL PWR BTTRY VOLTAGE WAS LOW	CNTRL BATT CHRGNG POWER SUPPLY FAILED
G	VY1	016217B	101376	BC	UP	B21	N	R	U		CNTRL BTTRY CHARGING POWER SUPPLY FAILED	INOPERATIVE VOLTAGE REGULATOR CIRCUIT
G	VY1	018407A	031877	BA	UP	A3413	N	R	D		UPS-1B ALARMED DUE TO LOW VOLTAGE,CAUSED SCRAM	CAPACITOR FAILED IN CHARGING POWER SUPPLY
G	VY1	018407B	031877	BC	UP	B13	N		T		UPS-1B CONTROL CHARGING POWER SUPPLY FAILED	FAILED CAPACITOR IN ON/OFF CIRCUITRY
G	VY1	025519	031779	BC	UP	B00	N		U		CONTROL CHARGING POWER SUPPLY FAILED	NO CAUSE GIVEN. CAUSED BATTERIES DISCHR

APPENDIX F
ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE MODE

CODES USED IN LER ONE-LINE DESCRIPTIONS

NSSS VENDOR

CODE	DESCRIPTION
B	BABCOCK & WILCOX
C	COMBUSTION ENGINEERING
W	WESTINGHOUSE
G	GENERAL ELECTRIC

EVENT CLASSIFICATION

CODE	DESCRIPTION
D	FREQUENCY
T	AGE
U	UNKNOWN

COMPONENT

CODE	DESCRIPTION
BA	BATTERY
BC	BATTERY CHARGER

FAILURE CAUSE

CODE	DESCRIPTION
00	UNKNOWN
01	PERSONNEL OPERATION
02	PERSONNEL MAINTENANCE
03	PERSONNEL TESTING
04	DESIGN/FABRICATION/CONSTRUCTION/QUALITY CONTROL
05	DEFECTIVE PROCEDURES
06	EXTREME ENVIRONMENT
08	CORROSION
10	NORMAL WEAR/NATURAL END OF LIFE
11	ELECTRICAL MALFUNCTION
12	MECHANICAL MALFUNCTION
13	PIECE PART FAILURE
14	LOW SPECIFIC GRAVITY
15	STRATIFICATION
16	HIGH ELECTROLYTE SOLUTION LEVEL
17	LOW ELECTROLYTE SOLUTION LEVEL
18	INSUFFICIENT CHARGE
20	DEFECTIVE/WEAK CELLS
21	VOLTAGE REGULATOR MALFUNCTION
22	CURRENT LIMITER MALFUNCTION
23	CURRENT CONTROLLER MALFUNCTION
24	VOLTAGE LIMITER MALFUNCTION
25	THERMAL OVERLOAD PROTECTION
26	COOLING FAN/VENTILATION MALFUNCTION
27	CHARGE CONTROL MALFUNCTION
28	CHARGE CONTROL TIMER MALFUNCTION
29	RECTIFIER PROBLEM
30	SHORT CIRCUIT
32	ELECTROLYTE DILUTION
33	FAULTY CABLE/CONNECTORS
34	CHARGER MALFUNCTION

FAILURE MODE

CODE	DESCRIPTION
A	REDUCED CAPABILITY
B	NO OUTPUT
C	UNKNOWN/UNSPECIFIED/OTHER
D	HIGH CURRENT/VOLTAGE OUTPUT
E	LOW OUTPUT VOLTAGE
G	HIGH AC RIPPLE ON DC OUTPUT
M	MAINTENANCE REPLACEMENT
T	TEST NOT PERFORMED

TYPE EVENT

CODE	DESCRIPTION
B	RECURRING COMMON CAUSE
C	COMMON CAUSE
R	RECURRING
S	COMMAND FAULT
T	RECURRING COMMAND FAULT
U	COMMON CAUSE COMMAND FAULT
V	RECURRING COMMON CAUSE COMMAND FAULT
BLANK	RANDOM

ACTIVITY RESULTING IN DISCOVERY

CODE	DESCRIPTION
A	TESTING(UNSPECIFIED)
B	NORMAL LOAD TESTING
C	MONTHLY TESTING
D	WEEKLY TESTING
E	QUARTERLY TESTING
F	REFUELING TESTING
G	18 MONTH TESTING
H	5 YEAR TESTING
M	MAINTENANCE
N	NORMAL PLANT OPERATION
R	RECORDS REVIEW
U	UNKNOWN

FLAGGING FIELD

CODE	DESCRIPTION
A	FAILED COMPONENT CAUSED AN ACCIDENT
B	COMPONENT FAILED TO MITIGATE AN ACCIDENT
C	SAFETY SIGNIFICANT
D	FAIL # NOT KNOWN
E	CELL # NOT KNOWN
F	FAIL # AND CELL # NOT KNOWN
N	FROM NSIC DATA BASE

SYSTEM IDENTIFICATION CODES

CODE	DESCRIPTION
AM	AREA MONITOR SYSTEM
DB	EMERGENCY DIESEL GENERATOR
ES	ENGINEERED SAFETY FEATURE
FP	FIRE PROTECTION SYSTEM
FW	FEEDWATER SYSTEM
NM	NEUTRON MONITORING BATTERY
NN	UNKNOWN/UNSPECIFIED/OTHER
SA	AUTOMATIC (REACTOR) DEPRESSURIZATION (ADS)
SP	SPECIAL USE BATTERIES
ST	STATION BATTERIES/CHARGERS
SW	SERVICE WATER BUILDING BATTERIES/CHARGERS
SY	SWITCHYARD BATTERIES/CHARGERS
UP	UNINTERRUPTIBLE POWER SYSTEM (UPS)

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE MODE

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL#	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
B	DR1	020448	011978	BA	ST	A1415	E		U		1N BTTRY CELL 32 ELECTROLYTE S.G. DECRS .003 OOT	ELEC. STRAT. DUE TO LO BTTRY LOADING
B	DB1	021587	042778	BA	FP	A17	N		U		4 CELLS OF ENGINE BTTRY W/ ELECTROLYTE BELOW PLATE	ELEC. ADDED BROUGHT CELLS UP TO NORMAL
B	DR1	025397	020879	BA	FP	A17	D		U		ELECTROL LEVEL IN 4 CELLS FOUND LO IN DSL ENG STA-	-RTING BTTRY. DIESEL STILL STARTED
C	CC1	021533	050378	BA	NN	A00	A		U		125 VDC BTTRY 22 CELL 54 ICV BELOW MIN VOLTAGE	CAUSE UNKNOWN
W	DC2	021633	060778	BA	NN	A14	A		U		CD PLANT BTTRY CELL 89 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	DC2	021632	061578	BA	NN	A14	A		U		AB PLANT BTTRY CELL 35 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	JF1	032332A	081280	BA	SW	A14	A	R	U		SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	BATT PLACED ON EQUALIZE & S.G. ACCEPTABLE
W	JF1	0323328	082590	BA	SW	A14	A	R	U		SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	NO EXTERNAL CAUSE FOR LOW SPECIFIC GRAV
W	JF1	032687	091180	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LO BATT CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033007	102180	BA	SW	A1404	A		D		SW "A" BTTRY SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033163	102880	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM PROX/ACID RES/POST SEAL DESIGN
W	MG1	039186	101981	BA	ST	A3303	M		T		CELL TO CELL RESISTANCE IN 3 CELLS FOUND HIGH	CORROSION OF TERMINAL CONNECTIONS
W	NA1	171672	120191	BA	DB	A1410	A		T		1J EMERGENCY D/G INOP CELL S.G. BELOW 1.2	D/G BATTERY NEAR END OF USEFUL LIFE
W	PR1	033222	110580	BC	NN	A2911	A		U		#12 BTTRY CHRGR FAILD TO PROVIDE NORMAL OUTPUT	FIRING CARD B NOT PROVIDING PULSE TO SCR
W	SA1	020738A	020178	BA	NN	A34	N		U		1C 125V BATTERY VOLTAGE LOW	1C1,1C2 BATT CHARGER D.C. BRKRS TRPD
W	YR1	019861	120577	BA	ST	A20	E		U		CELL VOLTAGE ON CELL 18 OF BANK 1 FOUND LOW	NO CAUSE FOUND,CELL REPLACED
G	BF1	038085	072281	BA	NN	A20	U		U		250 VOLT MAIN BATTERY TAKEN OOS TO BYPASS A CRACK-	-ED CELL.
G	BP1	0152488	063076	BA	ST	A18	N		D		LOAD ON BTTRY REDUCED VOLTAGE & SPECIFIC GRAVITY	STATION BATTERY CHARGER H&D FAILED
G	BP1	015326A	072276	BA	SA	A17	C		U		RDS BATTERY D PILOT CELL LOW ELECTROLYTE LEVEL	EXACT CAUSE UNKNOWN
G	BP1	0153268	072276	BA	SA	A1432	C		D		RDS BATTERY D PILOT CELL HAD LOW SPECIFIC GRAVITY	ADDITION OF WATER POSSIBLE CAUSE
G	BP1	015327A	072876	BA	SA	A17	C		U		RDS BTTRY C PILOT CELL LOW ELECTROLYTE LEVEL	UNKNOWN CAUSE
G	BP1	0160738	100376	BA	SA	A17	A		U		RDS D BTTRY PILOT & 3 OTHER CELLS LO ELECTROLYTE -	-LEVEL. UNKNOWN CAUSE
G	BP1	016073A	100476	BA	SA	A1405	A		D		RDS D BTTRY PILOT & 3 OTHER CELLS LO SPEC GRAVITY	INCOMPLETE ELECTROLYTE MIXING
G	BP1	016305A	102176	BA	SA	A14	D		U		RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	016459	110476	BA	SA	A14	C		U		RDS B PILOT CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE
G	BP1	0163058	112176	BA	SA	A14	D		U		RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	016584	120276	BA	SA	A14	D		U		RDS B BTTRY PILOT CELL 27 LO SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	017023	120976	BA	SA	A14	D		U		RDS B ONE CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	018462A	061677	BA	SA	A17	U	P	U		WATER ADDED TO CELL 27 OF RDS BATTERY "B"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	019472A	092977	BA	SA	A17	U	R	U		WATER ADDED TO CELL 12 OF RDS BATTERY "A"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	0194728	092977	BA	SA	A1432	C	R	D		SPECIFIC GRAVITY OF CELL 12 OF RDS BATTERY "A" LOW	WATER ADDED,CHARGE INSUFFICIENT TO MI>
G	BP1	019542A	100877	BA	SA	A17	U	R	U		WATER ADDED TO 3 CELLS OF RDS BATTERY "D"	NO CAUSE GIVEN FOR LOW WATER LEVEL

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE MODE

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILURE CODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	BP1	019542B	102077	BA	SA	A1432	C	R	D		SPECIFIC GRAVITY OF 3 CELLS OF RDS BATTERY "D" LOW	WATER ADDED,MIXING WAS INADEQUATE
G	BP1	020176	122277	BA	SA	A14	C	R	U		SPECIFIC GRAVITY ON RDS BATTERY "A",CELL 12 LOW	EQUALIZING CHARGE FOR 8 HOURS CORRECTED
G	BP1	021307	050478	BA	FP	A17	D		U		FIRE PUMP DIESEL STARTG BTTRY A CELLS 1,3,5 LO --	ELECTROLYTE SOLN. EXACT CAUSE UNKNOWN
G	BP1	021519	052578	BA	FP	A1705	D		D		FIRE PUMP DIESEL STARTG BTTRY "A" CELLS 2,4,6 LO--	ELECTROLYTE SOLN. INADQ MAINTENANCE PROC
G	BP1	022664	083178	BA	SA	A14	C	R	U		RDS BATTERY A, CELL 12 LO SPECIFIC GRAVITY READING	EXACT CAUSE UNKNOWN
G	BP1	027985	110179	BA	SA	A1420	C		U		SPECIFIC GRAVITY OF CELL 48 OF RDS BATTERY C LOW	CELL REPLACED,WOULD NOT TAKE EQUAL CHARGE
G	BP1	030237	012480	BA	SA	A1420	C		U		RDS C BTTRY CELL 14 LOW SPECIFIC GRAVITY RDG	DEFECTIVE CELL REPLACED
G	BP1	031176	050180	BA	SA	A1420	C		U		RDS BTTRY "A" CELL 2 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BP1	031848	071080	BA	SA	A1420	C		U		RDS C BTTRY CELLS 35,54 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BP1	032023	071880	BA	SA	A20	D		U		RDS C BTTRY PILOT CELL UNIT-9 INTERNAL RESISTANCE-	-INCRS. CAUSE UNKNOWN
G	BP1	032297	080780	BA	SA	A14	C		U		RDS C BTTRY CELLS 38,39,56 LOW SPECIFIC GRAVITY	VENDOR RECOM INCRS IN FLOAT VOLTAGE LEVEL
G	BP1	032656	091180	BA	SA	A1420	C		U		RDS D BATTERY CELL 12 LOW SPECIFIC GRAVITY RDG	CELL DID NOT ADQ RESPOND TO EQUALIZG CHRG
G	BP1	033544	121180	BA	SA	A1402	C		D		21 CELLS OF RDS "A" BATTERY LOW SPECIFIC GRAVITY	CELL TERMINALS INADQ CLEANED BY MAINT PER
G	BP1	037338	010281	BA	SA	A1420	C	R	U		RDS CH D BATTERY CELL 56 HAD LOW SG,WOULD NOT RES-	-POND TO EQUALIZING CHARGE.
G	BP1	038112	081581	BA	SA	A1602	A	C	D		FOUND PILOT CELL IN CH A RDS POWER SUPPLY WITH A -	-HIGH ELEC LEVEL. POSSIBLY OVERFILLED
G	BP1	038592	083181	BA	ST	A2014	C	C	D		LOW SG IN CELL 43 OF ST BTTRY,CELL FOUND CRACKED.-	-THIS LEAD TO DILUTION.CRACKED WHEN MOVED
G	BP1	038785	091581	BA	SA	A1420	C		U		"A" RDS BTTRY CELL #5 LOW SPECIFIC GRAVITY	CELL DIDN'T RESPOND ADQ TO EQUALIZG CHRG
G	BR1	025637A	032579	BA	NN	A3308	B	R	T		BATTERY 1B2 VOLTAGE FELL TO 102.5V THEN ROSE TO -	-118V. CORRODED AND LOOSE BTTRY CONNECT
G	BR1	0256378	032779	BA	NN	A3308	B	R	T		BTTRY 181 VOLTAGE FELL TO 96.8V THEN ROSE TO 118V	CORRODED AND LOOSE BTTRY CONNECTORS
G	DR3	016265A	101876	BA	NN	A34	A		D		BATTERY IN A DEGRADED CONDITION	CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"
G	DR3	020853	032878	BA	NN	A10	F	R	T		24/48 V BTTRY FAILED THE REFUELING OUTAGE DISCHRG-	-TEST. 4 CELLS REPLCD NAT'L END OF LIFE
G	EN2	030651*	032580	BC	ST	A2122	G		U	2	EMER STATION BATT CHRGR 2G,2J FAILD TO HOLD LOAD	VOLTG CNTRL & CURR LMT MODULES TUNED
G	EN2	030711A	032780	BC	ST	A29	G		U	2	STATION BATT CHRG 2A,2B FAILED TO MAINTAIN LOADS	SILICON CNTRL RECTIFIERS NEED LOAD BALANC
G	EN2	0307118	032780	BC	ST	A22	G		U		STATION BATT CHRG 2C FAILED TO MAINTAIN LOAD	CURRENT LIMIT MODULE NEEDED ADJUSTMENT
G	EN2	036943A	040781	BA	ST	A1602	N	C	D	2	ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF ST -	-BTTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	0369438	040781	BA	ST	A1702	N	C	D	2	ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF ST B-	-TTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943C	040781	BA	DB	A1602	N	C	D		ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF DIE-	-SEL GENERATOR BATTERY. PERSONNEL ERROR
G	EN2	036943D	040781	BA	DB	A1702	N	C	D		ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF DIES-	-EL GENERATOR BATTERY. PERSONNEL ERROR
G	FP1	019457	102077	BA	ST	A20	U		U		STATION BATTERY "B" FOUND TO HAVE CRACKED CELL	NO CAUSE KNOWN FOR CRACKED CELL #22B
G	FP1	021433	053178	BA	FP	A1420	A		U		LO S.G. OF BTTRY A2 CELL 1	BAD CELL IN BATTERY
G	FP1	026922	090479	BA	ST	A20	N		U		LEAKING CELL NOTED IN BATTERY "B". BATTERY TEMPOR-	-ARILY INOP WHILE CELL JUMPERED
G	FP1	031743*	062880	BA	FP	A14	A		T	2	DIESEL FIRE PUMP 24V BATT CELLS A2-6,B2-1 LOW S.G.	CHARGER OOS DURING SURVEILLANCE

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE MODE

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCUDEE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	FP1	033280	111780	BA	ST	A10	N		T		STATION BTTRY 8 MADE INOP TO JUMP A CELL	CELL #8 POOR PERFORMANCE DUE TO AGE
G	M01	166730A	061581	BA	NN	A3401	A		D		250 VDC BATTERY INADVERTENTLY DISCHARGED	PERS DISCONNECTED TEMP BATTERY CHARGER
G	P83	014211	012976	BA	NN	A14	B		U		B ATTRY CAPACITY BELOW DESIGN	CELL S.G. IN LO RNG, PARTIAL ACID RPLCD
G	VY1	016217A	101376	BA	UP	A34	N	R	U		UPS-1B CNTRL PWR BTTRY VOLTAGE WAS LOW	CNTRL BATT CHRGNG POWER SUPPLY FAILED
G	VY1	018407A	031877	BA	UP	A3413	N	R	D		UPS-1B ALARMED DUE TO LOW VOLTAGE,CAUSED SCRAM	CAPACITOR FAILED IN CHARGING POWER SUPPLY
B	CR3	038100	071481	BA	ST	B3002	N	C	D		STATION BATTERY SHORTED DURING MAINTENANCE	PERSONNEL ERROR. CAUSED REACTOR TRIP
B	DE3	022183	072778	BA	NN	B33	B		U		SMOKE FROM 1 TERMINAL OF I&C BATTERY 3C8	TERMINAL DFCTV/CNNCTNS FOUND DEFECTIVE
B	TT2	023084*	111278	BC	NN	B13	B		U	2	CHRGRS 2-2A/B FUSE BLEW NO CHRGR FOR BANK 2-2S8	DEFECTIVE GATING FILTER MODULES
C	AP2	026904	080979	BC	NN	B1306	N	C	D		BATTERY CHARGER 2D31 FAILED. DC OUTPUT LAMP SOCK-	-ET BURNED UP DUE TO HIGH HEAT,VOLT,DIST
C	AR2	027808	121179	BC	NN	B21	N	S	D		BATTERY CHARGER 2D32 AC BREAKER TRIPPED	CURRENT SURGED WHEN SHIFTING TO FLOAT
C	AR2	039245*	110581	BC	NN	B00	N		U	2	OUTPUT BREAKER OF BATTERY CHARGER 2D34 TRIPPED OP-	-EN TWICE. NO CAUSE COULD BE FOUND
C	CC2	017344	021777	BA	NN	B01	N	S	D		#11 125 VDC BATTERY INADVERTENTLY TAKEN OUT OF SE-	-RVICE. SUPERVISOR GAVE PERMISSION
C	PA1	025917	040479	BA	ST	B2005	A	C	D		2 CELLS IN STATION BATTERY #2 BURST WHILE TAKING -	-VOLTAGE READINGS. FULL CAPACITY AVAI
C	PA1	036000*	010681	BA	ST	B02	U	U	D	2	OUTPUT BREAKER FOR BOTH STATION BATTERIES WERE OP-	-ENED FOR 1 HOUR. PERSONNEL ERROR
C	SL1	020C69	121677	BC	NN	B00	M		D		OUTPUT LOST FROM "AB" BATTERY CHARGER	POWER SUPPLY BKR TRIPPED FOR NO REASON
C	SL1	039775	091881	BC	NN	B24	A	R	U		1A BATTERY CHARGER SHUTDOWN ON HIGH VOLTAGE	HIGH VOLTAGE DEVICE FOUND DEFECTIVE
W	BV1	022136	080478	BC	ST	B00	B		U		#4 STATION BTTRY CHRGR OUTPUT BRKR TRIPPED	IMPROPR OP OF CKTBRK.CAUSE OF TRP UNKNOWN
W	BV1	037757	061581	BC	NN	B2506	N	R	D		#2 BATTERY CHARGER OUTPUT BREAKER FAILED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAD
W	BV1	038347	080581	BC	NN	B2506	N	R	D		#2 BATTERY CHARGER OUTPUT BREAKER TRIPPED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAD
W	BV1	038825	091081	BC	ST	B33	N		U		#4 STATION BATTERY CHARGER TAKEN OUT OF SERVICE	BAD ELECTRICAL CONNECTION IN OUTPUT
W	IP3	014709	051076	BC	NN	B2630	A		U		BTTRY CHRGR TROUBLE ALARMED CHARGER FAN HAD TRPD	AC FAN MTR INOP EXPOSED WIRE BLEW A FUSE
W	IP3	015138	060876	BC	NN	B13	A	S	U		# 31 BTTRY CHRGR AC BRKR TRIPD BATT CHRGR INOP	PRESSURE SENSOR FAILED TRIPPING BREAKER
W	IP3	036207	012481	BC	NN	B2123	N		U		OUTPUT FROM CHARGER #32 DISCOVERED DROPPING	VOLTAGE AND CURRENT CONTROLLER REPLACED
W	IP3	038257	070681	BC	NN	B13	N	S	U		BATTERY CHARGER #32 DISCOVERED TRIPPED	FAILED OP AIR FLOW SENSOR SWITCH
W	JF1	021235A	041078	BA	SW	B00	E		U		2 CELLS IN SW BLDG "A" BATT BANK 1 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	JF1	021235B	041878	BA	SW	B00	E		U		2 CELLS IN SW BLDG B BATT BANK 2 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	JF1	032504	082580	BC	SW	B24	M	S	U		SW B DC DISTRIBUTION SYS INOP NO OUTPUT FROM BATT-	-CHRGR 4. HV S/D RELAY ACTUATED
W	PR2	014599	041476	BC	NN	B2133	B		U		#12 BATTERY CHARGER FAILED DISABLED "B" DC POWER	VOLTAGE CNTRL CRD LOOSE IN ITS SOCKET
W	RO2	015515	071076	BA	NN	B02	M		D		BATTERY B LEADS WERE REMOVED RENDERING BATT INOP	PERS FAILED TO COMPLY W/ T.S. 3.7
W	PO2	021046	071678	BA	ST	B3311	N		D		PLASTIC TOP OF 2 STATN "A" BATT CELLS ON FIRE	RESISTNC HEATG OF STRAP-CELL TERMINAL
W	SA1	0207388	020178	BC	NN	B00	N		U	2	1C1,1C2 BATT CHARGER D.C. BRKRS TRIPPED	UNKNOWN CAUSE
W	SA1	038834	091881	BA	FP	B33	N		U		BATTERY CABLE CLAMP FOUND ARCING AND CRACKED	CLAMP WAS REPLACED ON #2 FIRE PUMP BTTRY

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE MODE

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	SA2	038319	072481	BC	NN	A2101	N	U	D		2C1 BATTERY CHARGER DISCOVERED TRIPPED. VOLTAGE -	-SETTING WAS INCORRECTLY SET
W	SA2	038327	081281	BC	NN	B24	N		U		2B1 BATTERY CHARGER WOULD NOT PICK UP 28 VDC LOAD	HIGH VOLTAGE CUT-OUT ACTUATED
W	SA2	038683	090681	BA	AM	B00	N		U		RAD MONITOR 2R12A BATTERY PACK FAILED	NO CAUSE GIVEN
W	SF1	032338	080780	BA	DB	B30	N		U		D/G BTTRY 18-B CELL 51 SHORTED AND FAILED	NO CAUSE GIVEN
W	SF1	032342A	081280	BA	DB	B05	U		D		D/G BTTRY 18-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	SF1	032342B	081380	BA	DB	B05	U		D		D/G BTTRY 18-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	SU2	169141	081981	BC	FP	B13	N		U		SMOKE DET SYS INOP BTTRY CHRGR LOST POWER	FAULTY POWER SUPPLY CARD IN CHARGER
W	SU2	038470	090681	BA	FP	B00	U		U		SOMKE DETECTOR BATERY FOUND NOT TO TAKE A CHARGE	NO CAUSE GIVEN
W	SU2	038936A	100181	BA	FP	B34	A		D		SMOKE DETECTOR BATTERY FAILED	CHARGER NOT CHARGING BATTERY
W	SU2	038936B	100181	BC	FP	B00	A		U		BATTERY CHARGER FOR SMOKE DETECTOR BATTERY FAILED	NO CAUSE GIVEN
W	TP1	032622	090380	BA	FW	B20	N		U		DIESEL-DRIVEN AFWP FAILD TO START FROM MANUAL SIG	FAILED STARTING BATTERY
W	TU3	039363	111281	BA	NN	B20	A	R	U		"3A" 125 VDC FAILED TO HOLD A CHARGE	BEING EVALUATED W/ MANUFACTURER
W	YR1	019476A	101477	BC	NN	B1210	N	R	T		NO. 2 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING
W	YR1	019640	110577	BC	NN	B1210	N	R	T		NO. 1 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING DUE TO NORMAL WEAR
W	ZI1	171128A	121281	BA	NN	B01	M	U	D		UNIT 2 212 BATTERY TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
W	ZI1	171128B	121281	BC	NN	B01	M	U	D		UNIT 2 212 CHARGER TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
G	BF2	015394	070976	BA	NM	B3302	M	U	D		NEUTRON MONITORING BATTERY 2A MADE INOPERABLE	CNNCTR BROKEN OFF A CELL POST PERS ERROR
G	BF2	025671	041979	BA	SP	B3302	N	C	D		BROKEN TERMINAL DISCOVERED ON S/D BOARD "D" BTTRY	PERSONNEL ERROR. ALSO AFFECTED UNIT 1
G	BP1	01524-	063076	BC	ST	B29	N		U		STATION BATTERY CHARGER FAILED	DEFECTIVE SILICON RECTIFIERS
G	BP1	015444	081276	BA	DB	B33	N		T		EMERGENCY DIESEL GENERATOR DID NOT START DUE TO L-	-OOSE BATTERY CONNECTION.
G	BP1	017704*	033077	BA	UP	B3304	N	C	D	4	NO OUTPUT FROM ALL UPS BATTERY BANKS	CONNECTORS NOT TIGHTENED DURING INSTAL
G	BP1	019025A	082977	BA	FP	B3302	N		D		DIESEL FIRE PUMP "A" BATTERY FOUND WITH NO OUTPUT	CONNECTORS NOT TIGHTENED
G	BP1	019025B	082977	BA	FP	B00	N		U		DIESEL FIRE PUMP "B" BATTERY FOUND FAILED WITH NO-	-OUTPUT. DISCHR WITH NO APPARENT CAUSE
G	BR1	019389	102177	BC	NN	B2206	B		U		BATT CHRGR DC OUTPT FUSE FAILD WHEN CHRG BATT 2B-2	HI CURR/TEMP CAUSD SOLDERD LINKG SEPARATE
G	CD1	022101A	062778	BC	NN	B2333	N		T		1A 250V BTTRY CHRGR IIE BREAKER TRIPPED	POOR CNNCTR CNTCTS IN CURRENT MODULE
G	CD1	022101B	062778	BC	NN	B3304	N	U	D		1A 250V BTTRY CHRGR INPUT BREAKER TRIPPED	LOOSE CNNCTN AT CHRGR INPUT BRKR PHASE A
G	DR1	018553A	072977	BA	FP	B3413	N	C	D	2	DIESEL FIRE PUMP BATTERIES FAILED TO START DIESEL	FAILED FUSE FROM BATTERY CHARGER CIRCUIT
G	DR1	018553B	072977	BC	FP	B22	N		U		FUSE FOUND BLOWN IN DIESEL FIRE PUMP BATTERY CHAR-	-GER.
G	DP3	025951	042479	BA	NN	B01	N	U	D		UNIT 2*S BATTERY NOT RETURNED TO NORMAL LINEUP	BREAKER COULD HAVE BEEN SHUT AT ANY TIME
G	EN2	033891	081180	BA	ST	B30	M		U		DC BATT GROUND ON 2B STATION SERVICE BATTERY	NO CAUSE GIVEN
G	EN2	032981A	032381	BA	AM	B1834	N		D		POST IREATMENT MON 2D11-K615A BATTERY DRAINED	BATTERY CHARGER 2AB 24/48 VDC FAILED
G	EN2	032981B	032381	BC	NN	B00	N		U		24/48 VDC BATTERY CHARGER FOUND NOT CHARGHING	NO CAUSE GIVEN

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE MODE

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCUDREE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	FP1	171811	123081	BA	NM	B18	N		D	2	LOW VOLTAGE FROM DIVISION I 24 VCDC BATTERIES,CAUS	-ED ERRATIC READINGS ON LRM & SRM INST
G	MO1	1667308	061581	BC	NN	B01	A	U	D		TEMPORARY BATTERY CHARGER TAKEN OUT OF SERVICE	PERSONNEL ERROR,CAUSED BTTRY TO DISCHARGE
G	QC1	018293A	062877	BA	SY	B34	U	C	D		ONE OF TWO SWITCHING STATION BATTERIES FOUND OOS -	-FOR 11 DAYS. BATTERY CHARGER FAILED
G	QC1	0182938	062877	BC	SY	B2713	U		U		BATTERY CHARGER FOR SWITCHING STATION BATTERY FOU-	-ND OOS AFTER 11 DAYS
G	PI1	027950A	122379	BC	SY	B00	U	R	U		SWITCHYARD 125 VDC BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	PI1	0279508	122479	BC	SY	B00	N	R	U		SWITCHYARD 125 VDC BACKUP BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	PI1	033899	082180	BC	NN	B2113	N		U		"A" 125 VDC CONTROL BATT CHARGER INOPERABLE	VOLTAGE REGULATOR ELECTRONIC MODULES FPLC
G	VY1	0162178	101376	BC	UP	B21	N	R	U		CNTRL BTTRY CHARGING POWER SUPPLY FAILED	INOPERATIVE VOLTAGE REGULATOR CIRCUIT
G	VY1	0184078	031877	BC	UP	B13	N		T		UPS-1B CONTROL CHARGING POWER SUPPLY FAILED	FAILED CAPACITOR IN ON/OFF CIRCUITRY
G	VY1	021749	061978	BC	NN	B06	N	S	D		AC INPUT BRKR TO CA1 BATT CHRGR TRPD OPEN	SPURIOUS TRP OF AC BRKR IN AN ELEC SYSTEM
G	VY1	025519	031779	BC	UP	B00	N		U		CONTROL CHARGING POWER SUPPLY FAILED	NO CAUSE GIVEN. CAUSED BATTERIES DISCHR
W	TU3	033530A	121180	BC	NN	C00	N		U		PROBLEMS WITH 4B 125 VDC BATTERY CHARGER	NO CAUSE GIVEN
W	ZI1	172130	121581	BA	NN	C05	U	U	D		EQUALIZING CHARGE NOT PLACED ON BATTERY 112	PROCEDURE NOT CLEAR ON COMMUNICATIONS
G	DP3	0162658	101876	BC	NN	C00	A		U		CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"	UNKNOWN CAUSE
G	QC2	018164	031777	BC	NN	C23	U		U		UNITS BATTERY CHARGER APPARENTLY INOPERABLE	FAULTY INDUCTIVE CURRENT CONTROL CIRCUIT
W	DC1	025643	032379	BC	NN	D01	N	U	D		125 VDC EQUALIZING CHARGE TOO HIGH. FAILED INVERT-	-ER, CAUSED SCRAM AND SI. NO CAUSE
W	HN1	0146088	042576	BC	NN	D2833	N		U		BTTRY CHARGER A WENT INTO OVERCHARGE	FAULTY CNTCT ON CHARGER CONTROL TIMER
W	HN1	0146088	042576	BC	NN	D2122	N		U		VOLTG REG SPIKING TO 200 AMPS THEN SHUTTING OFF	FAULTY PHASING CRD IN CURRENT LIMITER CKT
C	PA1	016178	102076	BC	NN	E2201	N		D		DC BUS-2 VOLTG FELL;VOLTG ON ASSOC AC BUSES FELL	CURR LMTR & OUTPUT BRKR SETTING ERRONEOUS
W	BV1	021043	032078	BC	NN	E2713	N		U		DECR #4 DC BUS VOLTAGE DUE TO A FAULTY BTTRY CHRGR	FAILD COLLECTR RESISTR IN CHRGR CNTRL CKT
G	DA1	171665	120881	BC	NN	E00	N		U		BATTERY CHARGER OUTPUT INCORRECT	UNKNOWN
G	QC2	018460	060977	BC	NN	E2101	N	U	D		BATTERY CHARGER SUPPLYING CURRENT TO BATTERY FOUN-	-D LOW. FLOATING POTENTIOMETER SET LOW
C	CO1	037646	050581	BC	ST	G29	B		U		HIGH RIPPLE FROM BATTERY CHARGER WHICH FAILED INV-	-ERTER 1A. FAILED SCR
C	CC1	037262	050681	BA	NN	M20	A		U		VOLT OF CELL 18 OF 125 VDC BATTERY 12 FOUND .08V -	-BELOW MINIMUM. FULL CAPACITY AVAILABLE
C	MI2	026979	080379	BA	NN	M20	A		U		VARIOUS CELLS REPLACED IN 2018 BTTRY (4 CELLS)	REDUCTION IN CELL VOLT. FULL CAPACITY
W	BV1	016357	102476	BA	NN	M00	A		U		VOLTAGE DECREASED IN CELL 48 BY MORE THAN 0.05V	UNKNOWN. CELL 48 FROM BTTRY 3, 1650 A.H.
W	BV1	028147	092179	BA	NN	M2010	A		T		CELL #6 OF BATTERY NO. 1 COULD NOT HOLD ORIGINAL -	-VOLTAGE. FULL BATTERY CAPACITY AVAIL.
W	BV1	039154	101781	BA	NN	M20	E	R	U		2 OF 60 CELLS VOLTAGE FOUND DROPPED BY .05 VDC	NO CAUSE GIVEN,BATTRY HAD FULL CAPACITY
W	NA2	036466*	021881	BA	DB	M14	E		U	2	BATTERIES FOR 2J & 2H DIESEL GENERATORS FAILED SU-	-RVEILLANCE TEST. 4 CELLS REPLACED
G	BP1	017024*	010477	BA	SA	M14	A	R	U	2	8 CELLS SPECIFIC GRAVITY FOUND BELOW 1.2. EVALUA-	-TION REVEALED ADEQUATE CAPACITY
G	BP1	017464	022477	BA	SA	M14	C	R	U		RDS BATTERY B HAD ONE CELL BELOW MINIMUM SPECIFIC-	-GRAVITY. ADEQUATE CAPACITY AVAILABLE
G	BP1	017463	031777	BA	SA	M14	C	R	U		SPECIFIC GRAVITY FOUND LOW IN 5 CELLS OF RDS BTTRY-	-"A". ADEQUATE CAPACITY AVAILABLE

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE MODE

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILURE CODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	BP1	0180968	042177	BA	SA	M14	C	R	U		RDS BATTERY B,CELL 27 FOUND TO HAVE LOW SPECIFIC -	-GRAVITY OF 1.191. FULL CAPACITY AVAIL
G	BP1	0180968	042777	BA	SA	M14	C		U		SPECIFIC GRAVITY OF LO MARGINAL CELLS ADJUSTED OF-	-RDS BATTERY B. FULL CAPACITY AVAILABLE
G	EN1	0214754	060478	BC	ST	M1304	M		D	2	HEAT-SENSITIVE XSTR ON BATT CHRGR FIRING MODUL CRD	SHOULD BE A NON-HEAT-SENSITIVE TRANSISTOR
G	QC1	019222	092477	BA	NN	M2010	U		I		BATTERY SYSTEM TAKEN OUT OF SERVICE	REPLACED 12 WEAK CELLS,NORMAL END OF LIFE
B	CR3	017166A	011277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	0171668	020277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166C	020977	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	021165	040578	BA	NN	T02	R	V	D		WRONG BTTRY CELLS MONITORED FOR WEEKLY BATT SURV	PERSONNEL NOT FOLLOWING PROCEDURES
B	DB1	022362	090578	BA	ST	T02	R	U	D		STATION BATTERIES WKLY SURV TEST NOT DONE ON TIME	MISUNDERSTANDING BTWN PERSONNEL
B	DE3	015532	081876	BA	NN	T05	R	U	D		125-VDC INSTR & CNTRL BATTERIES NOT LOAD TESTED	DFCTV PROC: WRONG DATA IN SURV PRINTOUT
C	AR2	026489	052279	BA	ST	T03	R	U	D		SURVEILLANCE NOT PERFORMED ON STATION BATTERIES	PERSONNEL OVERSIGHT
C	SL1	037962	062481	BC	NN	T02	R	U	D		SURVEILLANCE REQUIREMENTS NOT MET ON "AB" BATTERY-	-CHARGER. MISINTERPRETATION OF TECH SPEC
W	BV1	017119A	020477	BA	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON #3 & #4 STATIO-	-N BATTERIES. PERSONNEL ERROR
W	BV1	0171198	020477	BC	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON CHARGERS ASSOC-	-IATED WITH #3 & #4 STATION BTTRY. PERSON
W	DC2	039127	101981	BA	NN	T05	R	U	D		SURVEILLANCE NOT PERFORMED ON "N" TRAIN BATTERY	PROCEDURE LACKED SIGNOFF
W	JF1	027181	090679	BA	NN	T03	R	U	D		QUARTERLY AUXILIARY BUILDING BATTERY VERIFICATION-	-NOT PERFORMED ON TIME. PERSONNEL
W	NA1	026565	062879	BA	DB	T05	R	U	D		7 DAY SURVEILLANCE OF EMERGENCY DIESEL GENERATOR -	-BATTERIES EXCEEDED INTERVAL. PROCEDURAL
W	NA1	026656	073179	BA	DB	T05	R	U	D		DIESEL GENERATOR BATTERIES SURVEILLANCE NOT DONE	TIME LAG IN IMPLEMENTING NEW PROCEDURES
W	NA1	036491A	022881	BA	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	NA1	0364918	022881	BC	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-B SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	NA2	036417	022081	BA	DB	T05	R	U	D		DATA FROM TWO TESTS ON 24 DIESEL BATTERY FOUND NO-	-T USABLE. NOT COMPARED WITH INITIAL CON
W	PR1	026268	053179	BA	FP	T05	R	U	D		DIESEL DRIVEN WEEKLY BATTERY INSPECTION NOT DONE	PROCEDURES WERE DEFECTIVE
W	PR1	030917	033180	BA	ST	T02	R	U	D		INDIVIDUAL FLOAT CELL VOLT MEAS NOT DONE IN STATI-	-ON BATTERY TEST. PERSONNEL OVERSIGHT
W	SA1	032162	072180	BA	FP	T02	R	U	D		92 DAY & 18 MON SURV NOT DONE ON 24 V STARTG BATT	ELECTRICIAN NOT COMPLETING JOB
W	TR1	014563	032476	BA	ES	T05	R	U	D		ESF DC PWR SUPPLIES SURV REQ PERFORMD AT WRNG FREQ	PROCEDURE DID NOT USE FREQ REQ BY T.S.
W	TR1	020885	031778	BA	NN	T02	R	U	D		125 VDC ELECTRICAL SYS OP NOT VERIFIED WK OF 2-26	MAINT PERS FAILD TO INSURE SURV COMPLETED
W	TR1	025211A	011979	BA	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TR1	0252118	011979	BC	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TU3	022061A	122277	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	TU3	0220618	122977	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	TU3	0335308	121180	BA	NN	T34	N	U	I		48 125 VDC BATT DOS,TECH SPEC EXCEEDED	PROBLEM W/ ASSOCIATED BTTRY CHARGER
W	YP1	0194768	101477	BC	NN	T01	N	U	D		NO. 1 BATTERY CHARGER CROSS TIED TO NO. 2 BATTERY	OVERSIGHT CAUSE ECO STATED IN TECH SPEC

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE MODE

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCUDEE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	BP1	0153278	072976	BA	SA	T14	C	U	D		RDS BTTRY C PILOT CELL RDG LO SPECIFIC GRAVITY	DFCTV PROC SPECIFIC GRAVITY READ TOO SOON
G	BP1	0184628	061677	BA	SA	T1432	C	V	D		SPECIFIC GRAVITY OF CELL 27 OF RDS BATTERY B LOW	WATER ADDED THEN TESTED TOO SOON
G	BP1	033637	122380	BA	NN	T02	R	U	D		DC BATTERY MONTHLY TESTS OVERDUE	INADQ ADMIN CONTROLS & PERSONNEL ERROR
G	BP2	014651	021276	BA	NN	T05	R	U	D		MONTHLY INSTEAD OF QUARTERLY BATTERY P.T. PERFORMD	WRONG P.T. SCHEDULED BY MISTAKE
G	C01	037938	052881	BA	ST	T03	R	U	D		SG TESTS FOR 125V 1A&B AND 250V 1B NOT PERFORMED -	-PROPERLY. PERSONNEL USED WRONG HYDROM
G	DA1	030982	041780	BA	NN	T02	R	U	D		WKLY BATT SURV DOCUMENTATION NOT COMPLETED	PERSONNEL ERROR-NONLIC. OPERATIONS PERS
G	DR2	039116	102181	BA	NN	T01	R	U	D		QUARTERLY STORAGE BATTERY SURVEILLANCE DONE 3 DAY-	-S LATE. OVERSIGHT BY OPERATING SHIFT
G	DR3	036569	030381	BA	NN	T01	R	U	D		WEEKLY STORAGE BATTERY SURVEILLANCE DONE 4 DAYS L-	-ATE. OVERSIGHT BY OPERATING SHIFT
G	EN1	021719	062778	BA	DB	T02	R	U	D		WKLY PILOT CELL SURV OF 1C D/G BTTRY NOT COMPLET--	ED ON TIME. PERSONNEL OVERSIGHT
G	EN1	027782	112679	BA	NN	T03	R	U	D		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	EN2	022208	081678	BA	NN	T02	R	U	D		WKLY PILOT CELL SURV OF PLANT BATT NOT COMPLETED--	ON TIME. NOTICES ROUTED TO ABSENT PERS
G	EN2	026657	071879	BA	NN	T03	R	V	D		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	MI1	014478	040776	BA	SY	T01	R	U	D		SWITCHYARD BTTRY SURVEILLANCE NOT PERFORMED W/IN--	REQ TIME PERIOD. PERSONNEL ERROR
G	OC1	021497A	052478	BA	DB	T01	N	U	D		D/G BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	021497B	052478	BA	ST	T01	N	U	D		STATION BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	023298A	121378	BA	DB	T01	R	U	D		D/G BTTRY NOT TESTED/MONITORED W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	023298B	121378	BA	ST	T01	R	U	D		STATION BTTRY NOT TEST/MONITOR W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	030599A	022880	BA	ST	T02	R	U	D		MAIN STATION BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	OC1	030599B	022880	BA	DB	T02	R	U	D		DIESEL GENERATOR BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	OC1	038737	091181	BA	NN	T02	R	U	D		BATTERY SURVEILLANCE PROCEDURES FOUND NOT TO FULL-	-Y COMPLY WITH NEW REQUIREMENTS.

APPENDIX G
ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE CAUSE

CODES USED IN LER ONE-LINE DESCRIPTIONS

NSSS VENDOR

CODE	DESCRIPTION
B	BABCOCK & WILCOX
C	COMBUSTION ENGINEERING
W	WESTINGHOUSE
G	GENERAL ELECTRIC

EVENT CLASSIFICATION

CODE	DESCRIPTION
D	FREQUENCY
T	AGE
U	UNKNOWN

COMPONENT

CODE	DESCRIPTION
BA	BATTERY
BC	BATTERY CHARGER

FAILURE CAUSE

CODE	DESCRIPTION
00	UNKNOWN
01	PERSONNEL OPERATION
02	PERSONNEL MAINTENANCE
03	PERSONNEL TESTING
04	DESIGN/FABRICATION/CONSTRUCTION/QUALITY CONTROL
05	DEFECTIVE PROCEDURES
06	EXTREME ENVIRONMENT
08	CORROSION
10	NORMAL WEAR/NATURAL END OF LIFE
11	ELECTRICAL MALFUNCTION
12	MECHANICAL MALFUNCTION
13	PIECE PART FAILURE
14	LOW SPECIFIC GRAVITY
15	STRATIFICATION
16	HIGH ELECTROLYTE SOLUTION LEVEL
17	LOW ELECTROLYTE SOLUTION LEVEL
18	INSUFFICIENT CHARGE
20	DEFECTIVE/WEAK CELLS
21	VOLTAGE REGULATOR MALFUNCTION
22	CURRENT LIMITER MALFUNCTION
23	CURRENT CONTROLLER MALFUNCTION
24	VOLTAGE LIMITER MALFUNCTION
25	THERMAL OVERLOAD PROTECTION
26	COOLING FAN/VENTILATION MALFUNCTION
27	CHARGE CONTROL MALFUNCTION
28	CHARGE CONTROL TIMER MALFUNCTION
29	RECTIFIER PROBLEM
30	SHORT CIRCUIT
32	ELECTROLYTE DILUTION
33	FAULTY CABLE/CONNECTORS
34	CHARGER MALFUNCTION

FAILURE MODE

CODE	DESCRIPTION
A	REDUCED CAPABILITY
B	NO OUTPUT
C	UNKNOWN/UNSPECIFIED/OTHER
D	HIGH CURRENT/VOLTAGE OUTPUT
E	LOW OUTPUT VOLTAGE
G	HIGH AC RIPPLE ON DC OUTPUT
M	MAINTENANCE REPLACEMENT
T	TEST NOT PERFORMED

TYPE EVENT

CODE	DESCRIPTION
B	RECURRING COMMON CAUSE
C	COMMON CAUSE
R	RECURRING
S	COMMAND FAULT
T	RECURRING COMMAND FAULT
U	COMMON CAUSE COMMAND FAULT
V	RECURRING COMMON CAUSE COMMAND FAULT
BLANK	RANDOM

ACTIVITY RESULTING IN DISCOVERY

CODE	DESCRIPTION
A	TESTING(UNSPECIFIED)
B	NORMAL LOAD TESTING
C	MONTHLY TESTING
D	WEEKLY TESTING
E	QUARTERLY TESTING
F	REFUELING TESTING
G	18 MONTH TESTING
H	5 YEAR TESTING
M	MAINTENANCE
N	NORMAL PLANT OPERATION
R	RECORDS REVIEW
U	UNKNOWN

FLAGGING FIELD

CODE	DESCRIPTION
A	FAILED COMPONENT CAUSED AN ACCIDENT
B	COMPONENT FAILED TO MITIGATE AN ACCIDENT
C	SAFETY SIGNIFICANT
D	FAIL # NOT KNOWN
E	CELL # NOT KNOWN
F	FAIL # AND CELL # NOT KNOWN
N	FROM NSIC DATA BASE

SYSTEM IDENTIFICATION CODES

CODE	DESCRIPTION
AM	AREA MONITOR SYSTEM
DB	EMERGENCY DIESEL GENERATOR
ES	ENGINEERED SAFETY FEATURE
FP	FIRE PROTECTION SYSTEM
FW	FEEDWATER SYSTEM
NM	NEUTRON MONITORING BATTERY
NN	UNKNOWN/UNSPECIFIED/OTHER
SA	AUTOMATIC (REACTOR) DEPRESSURIZATION (ADS)
SP	SPECIAL USE BATTERIES
ST	STATION BATTERIES/CHARGERS
SW	SERVICE WATER BUILDING BATTERIES/CHARGERS
SY	SWITCHYARD BATTERIES/CHARGERS
UP	UNINTERRUPTIBLE POWER SYSTEM (UPS)

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE CAUSE

NSRS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
C	AR2	0392454	110581	BC	NN	B00	N		U	2	OUTPUT BREAKER OF BATTERY CHARGER 2D34 TRIPPED OP-	-EN TWICE. NO CAUSE COULD BE FOUND
C	CC1	021533	050378	BA	NN	A00	A		U		125 VDC BTTRY 22 CELL 54 ICV BELOW MIN VOLTAGE	CAUSE UNKNOWN
C	SL1	020069	121677	BC	NN	B00	N		D		OUTPUT LOST FROM "AB" BATTERY CHARGER	POWER SUPPLY BKR TRIPPED FOR NO REASON
W	BV1	016357	102476	BA	NN	M00	A		U		VOLTAGE DECREASED IN CELL 48 BY MORE THAN 0.05V	UNKNOWN. CELL 48 FROM BTTRY 3, 1650 A.M.
W	BV1	022136	080478	BC	ST	B00	B		U		#4 STATION BTTRY CHRGR OUTPUT BRKR TRIPPED	IMPROPR OP OF CKTBRK.CAUSE OF TRP UNKNOWN
W	JF1	021235A	041878	BA	SW	B00	E		U		2 CELLS IN SW BLDG "A" BATT BANK 1 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	JF1	021235B	041878	BA	SW	B00	E		U		2 CELLS IN SW BLDG B BATT BANK 2 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	SA1	0207388	020178	BC	NN	B00	N		U	2	1C1,1C2 BATT CHARGER D.C. BRKRS TRIPPED	UNKNOWN CAUSE
W	SA2	038683	090681	BA	AM	B00	N		U		RAD MONITOR 2R12A BATTERY PACK FAILED	NO CAUSE GIVEN
W	SU2	038470	090651	BA	FP	B00	U		U		SOMKE DETECTOR BATERY FOUND NOT TO TAKE A CHARGE	NO CAUSE GIVEN
W	SU2	0389368	100181	BC	FP	B00	A		U		BATTERY CHARGER FOR SMOKE DETECTOR BATTERY FAILED	NO CAUSE GIVEN
W	TU3	033530A	121180	BC	NN	C00	N		U		PROBLEMS WITH 48 125 VDC BATTERY CHARGER	NO CAUSE GIVEN
G	BP1	019C258	082977	BA	FP	B00	N		U		DIESEL FIRE PUMP "B" BATTERY FOUND FAILED WITH NO-	-OUTPUT. DISCHR WITH NO APPARENT CAUSE
G	DA1	171665	120881	BC	NN	E00	N		U		BATTERY CHARGER OUTPUT INCORRECT	UNKNOWN
G	DR3	0162658	101876	BC	NN	C00	A		U		CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"	UNKNOWN CAUSE
G	EN2	0329818	032381	BC	NN	B00	N		U		24/48 VDC BATTERY CHARGER FOUND NOT CHARGHING	NO CAUSE GIVEN
G	PI1	027950A	122379	BC	SY	B00	U	R	U		SWITCHYARD 125 VDC BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	PI1	0279508	122479	BC	SY	B00	N	R	U		SWITCHYARD 125 VDC BACKUP BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	VY1	025519	031779	BC	UP	B00	N		U		CONTROL CHARGING POWER SUPPLY FAILED	NO CAUSE GIVEN. CAUSED BATTERIES DISCHR
C	CC2	017344	021777	BA	NN	B01	N	S	D		#11 125 VDC BATTERY INADVERTENTLY TAKEN OUT OF SE-	-RVICE. SUPERVISOR GAVE PERMISSION
W	DC1	025643	032379	BC	NN	D01	N	U	D		125 VDC EQUALIZING CHARGE TOO HIGH, FAILED INVERT-	-ER, CAUSED SCRAM AND SI. NO CAUSE
W	TU3	0220618	122277	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	TU3	0220628	122977	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	YP1	0194768	101477	BC	NN	T01	N	U	D		NO. 1 BATTERY CHARGER CROSS TIED TO NO. 2 BATTERY	OVERSIGHT CAUSE ECO STATED IN TECH SPEC
W	ZI1	1711284	121281	BA	NN	B01	M	U	D		UNIT 2 212 BATTERY TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
W	ZI1	1711288	121281	BC	NN	B01	M	U	D		UNIT 2 212 CHARGER TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
G	DR2	039116	102181	BA	NN	T01	R	U	D		QUARTERLY STORAGE BATTERY SURVEILLANCE DONE 3 DAY-	-S LATE. OVERSIGHT BY OPERATING SHIFT
G	DR3	025951	042479	BA	NN	B01	N	U	D		UNIT 2*S BATTERY NOT RETURNED TO NORMAL LINEUP	BREAKER COULD HAVE BEEN SHUT AT ANY TIME
G	DR3	036569	030381	BA	NN	T01	R	U	D		WEEKLY STORAGE BATTERY SURVEILLANCE DONE 4 DAYS L-	-ATE. OVERSIGHT BY OPERATING SHIFT
G	MI1	014478	040776	BA	SY	T01	R	U	D		SWITCHYARD BTTRY SURVEILLANCE NOT PERFORMED W/IN--	REQ TIME PERIOD. PERSONNEL ERROR
G	MO1	1667308	061581	BC	NN	B01	A	U	D		TEMPORARY BATTERY CHARGER TAKEN OUT OF SERVICE	PERSONNEL ERROR,CAUSED BTTRY TO DISCHARGE
G	OC1	021497A	052478	BA	DB	T01	N	U	D		D/G BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE CAUSE

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	DC1	0214978	052478	BA	ST	T01	N	U	D		STATION BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	DC1	023298A	121378	BA	DB	T01	R	U	D		D/G BTTRY NOT TESTED/MONITORED W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	DC1	0232988	121378	BA	ST	T01	R	U	D		STATION BTTRY NOT TEST/MONITOR W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
B	CR3	021165	040578	BA	NN	T02	R	V	D		WRONG BTTRY CELLS MONITORED FOR WEEKLY BATT SURV	PERSONNEL NOT FOLLOWING PROCEDURES
B	DB1	022362	090578	BA	ST	T02	R	U	D		STATION BATTERIES WKLY SURV TEST NOT DONE ON TIME	MISUNDERSTANDING BTWN PERSONNEL
C	PA1	036000*	010681	BA	ST	B02	U	U	D	2	OUTPUT BREAKER FOR BOTH STATION BATTERIES WERE OP-	-ENED FOR 1 HOUR. PERSONNEL ERROR
C	SL1	037962	062481	BC	NN	T02	R	U	D		SURVEILLANCE REQUIREMENTS NOT MET ON "A&B" BATTERY-	-CHARGER. MISINTERPRETATION OF TECH SPEC
W	NA1	036491A	022881	BA	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	NA1	0364918	022881	BC	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	PB1	030917	033180	BA	ST	T02	R	U	D		INDIVIDUAL FLOAT CELL VOLT MEAS NOT DONE IN STATI-	-ON BATTERY TEST. PERSONNEL OVERSIGHT
W	RD2	015515	071076	BA	NN	B02	M		D		BATTERY B LEADS WERE REMOVED RENDERING BATT INOP	PERS FAILED TO COMPLY W/ T.S. 3.7
W	SA1	032162	072180	BA	FP	T02	R	U	D		92 DAY & 18 MON SURV NOT DONE ON 24 V STARTG BATT	ELECTRICIAN NOT COMPLETING JOB
W	TP1	020885	031778	BA	NN	T02	R	U	D		125 VDC ELECTRICAL SYS OP NOT VERIFIED WK OF 2-26	MAINT PERS FAILD TO INSURE SURV COMPLETED
G	PP1	033637	122380	BA	NN	T02	R	U	D		DC BATTERY MONTHLY TESTS OVERDUE	INADQ ADMIN CONTROLS & PERSONNEL ERROR
G	DA1	030982	041780	BA	NN	T02	R	U	D		WKLY BATT SURV DOCUMENTATION NOT COMPLETED	PERSONNEL ERROR-NONLIC. OPERATIONS PERS
G	EN1	021719	062778	BA	DB	T02	R	U	D		WKLY PILOT CELL SURV OF 1C D/G BTTRY NOT COMPLET--	-ED ON TIME. PERSONNEL OVERSIGHT
G	EN2	022208	081678	BA	NN	T02	R	U	D		WKLY PILOT CELL SURV OF PLANT BATT NOT COMPLETED--	ON TIME. NOTICES ROUTED TO ABSENT PERS
G	DC1	030599A	022880	BA	ST	T02	R	U	D		MAIN STATION BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	DC1	0305998	022880	BA	DB	T02	R	U	D		DIESEL GENERATOR BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	DC1	038737	091181	BA	NN	T02	R	U	D		BATTERY SURVEILLANCE PROCEDURES FOUND NOT TO FULL-	-Y COMPLY WITH NEW REQUIREMENTS.
B	CR3	017166A	011277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166B	020277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166C	020977	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
C	AR2	026489	052279	BA	ST	T03	R	U	D		SURVEILLANCE NOT PERFORMED ON STATION BATTERIES	PERSONNEL OVERSIGHT
W	BV1	017119A	020477	BA	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON #3 & #4 STATIO-	-N BATTERIES. PERSONNEL ERROR
W	BV1	017119B	020477	BC	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON CHARGERS ASSOC-	-IATED WITH #3 & #4 STATION BTTRY. PERSON
W	JF1	027181	090679	BA	NN	T03	R	U	D		QUARTERLY AUXILIARY BUILDING BATTERY VERIFICATION-	-NOT PERFORMED ON TIME. PERSONNEL
W	TR1	025211A	011979	BA	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TR1	0252118	011979	BC	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
G	CC1	037938	052881	BA	ST	T03	R	U	D		SG TESTS FOR 125V 1A&B AND 250V 1B NOT PERFORMED -	-PROPERLY. PERSONNEL USED WRONG HYDREM
G	EN1	027782	112679	BA	NN	T03	R	U	D		CELL SURVEILLANCE REQUIREMENT NOT PER.ORMED	PERSONNEL OVERSIGHT
G	EN2	026657	071879	BA	NN	T03	R	V	D		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE CAUSE

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
B	DE3	015532	081876	BA	NN	T05	R	U	D		125-VDC INSTR & CNTRL BATTERIES NOT LOAD TESTED	DFCTV PROC: WRONG DATA IN SURV PRINTOUT
W	DC2	039127	101981	BA	NN	T05	R	U	D		SURVEILLANCE NOT PERFORMED ON "N" TRAIN BATTERY	PROCEDURE LACKED SIGNOFF
W	NA1	026565	062879	BA	DB	I05	R	U	D		7 DAY SURVEILLANCE OF EMERGENCY DIESEL GENERATOR -	-BATTERIES EXCEEDED INTERVAL. PROCEDERAL
W	NA1	026656	073179	BA	DB	T05	R	U	D		DIESEL GENERATOR BATTERIES SURVEILLANCE NOT DONE	TIME LAG IN IMPLEMENTING NEW PROCEDURES
W	NA2	036417	022081	BA	DB	T05	R	U	D		DATA FROM TWO TESTS ON 2J DIESEL BATTERY FOUND NO-	-T USABLE. NOT COMPARED WITH INITIAL CON
W	PR1	026268	053179	BA	FP	T05	R	U	D		DIESEL DRIVEN WEEKLY BATTERY INSPECTION NOT DONE	PROCEDURES WERE DEFECTIVE
W	SE1	032342A	081280	BA	DB	B05	U		D		D/G BTTRY 1B-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	SE1	032342B	081380	BA	DB	B05	U		D		D/G BTTRY 1B-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	TR1	014563	032476	BA	ES	T05	R	U	D		ESF DC PWR SUPPLIES SURV REQ PERFORMD AT WRNG FREQ	PROCEDURE DID NOT USE FREQ REQ BY T.S.
W	ZI1	172130	121581	BA	NN	C05	U	U	D		EQUALIZING CHARGE NOT PLACED ON BATTERY 112	PROCEDURE NOT CLEAR ON COMMUNICATIONS
G	BR2	014651	021276	BA	NN	T05	R	U	D		MONTHLY INSTEAD OF QUARTERLY BATTERY P.T. PERFORMD	WRONG P.T. SCHEDULED BY MISTAKE
G	VY1	021749	061978	BC	NN	B06	N	S	D		AC INPUT BRKR TO CA1 BATT CHRGR TRPD OPEN	SPURIOUS TRP OF AC BRKR IN AN ELEC STERM
G	DR3	020853	032878	BA	NN	A10	F	R	T		24/48 V BTTRY FAILED THE REFUELING OUTAGE DISCHRG-	-TEST. 4 CELLS REPLCD NAT'L END OF LIFE
G	FP1	033280	111780	BA	ST	A10	N		T		STATION BTTRY B MADE INOP TO JUMP A CELL	CELL #8 POOR PERFORMANCE DUE TO AGE
W	YR1	019476A	101477	BC	NN	B1210	N	R	T		NO. 2 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING
W	YR1	019640	110577	BC	NN	B1210	N	R	T		NO. 1 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING DUE TO NORMAL WEAR
B	TI2	023C84*	111278	BC	NN	B13	B		U	2	CHRGRS 2-2A/B FUSE BLEW NO CHRGR FOR BANK 2-2SB	DEFECTIVE GATING FILTER MODULES
C	AR2	026904	080979	BC	NN	B1306	N	C	D		BATTERY CHARGER 2D31 FAILED. DC OUTPUT LAMP SOCK-	-ET BURNED UP DUE TO HIGH HEAT,VOLT,DEST
W	IP3	015138	060876	BC	NN	B13	A	S	U		# 31 BTTRY CHRGR AC BRKR TRIPD BATT CHRGR INOP	PRESSURE SENSOR FAILED TRIPPING BREAKER
W	IP3	038257	070681	BC	NN	B13	N	S	U		BATTERY CHARGER #32 DISCOVERED TRIPPED	FAILED DP AIR FLOW SENSOR SWITCH
W	SU2	169141	081981	BC	FP	B13	N		U		SMOKE DET SYS INOP BTTRY CHRGR LOST POWER	FAULTY POWER SUPPLY CARD IN CHARGER
G	EN1	021475*	060478	BC	ST	M1304	M		D	2	HEAT-SENSITIVE XSTR ON BATT CHRGR FIRING MODUL CRD	SHOULD BE A NON-HEAT-SENSITIVE TRANSISTOR
G	VY.	084078	031877	BC	UP	B13	N		T		UPS-1B CONTROL CHARGING POWER SUPPLY FAILED	FAILED CAPACITOR IN ON/OFF CIRCUITRY
B	DB	020448	011978	BA	ST	A1415	E		U		1N BTTRY CELL 32 ELECTROLYTE S.G. DECRS .003 OOT	ELEC. STRAT. DUE TO LO BTTRY LOADING
W	DC2	021633	060778	BA	NN	A14	A		U		CD PLANT BTTRY CELL 89 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	DC2	021632	061578	BA	NN	A14	A		U		AB PLANT BTTRY CELL 35 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	JF1	032332A	081280	BA	SW	A14	A	R	U		SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	BATT PLACED ON EQUALIZE & S.G. ACCEPTABLE
W	JF1	032332B	082580	BA	SW	A14	A	R	U		SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	NO EXTERNAL CAUSE FOR LOW SPECIFIC GRAV
W	JF1	032687	091180	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LO BATT CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033007	102180	BA	SW	A1404	A		D		SW "A" BTTRY SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033163	102880	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM PROX/ACID RES/POST SEAL DESIGN
W	NA1	171672	120181	BA	DB	A1410	A		T		1J EMERGENCY D/G INOP CELL S.G. BELOW 1.2	D/G BATTERY NEAR END OF USEFUL LIFE

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE CAUSE

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILED COMPONENT	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	MAZ	0364664	021881	BA	DB	M14	E		U	2	BATTERIES FOR 2J & 2H DIESEL GENERATORS FAILED SU-	-RVEILLANCE TEST. 4 CELLS REPLACED
G	BPI	0153268	072276	BA	SA	A1432	C		D		RDS BATTERY D PILOT CELL HAD LOW SPECIFIC GRAVITY	ADDITION OF WATER POSSIBLE CAUSE
G	BPI	0153278	072976	BA	SA	T14	C	U	D		RDS BTTRY C PILOT CELL RDG LO SPECIFIC GRAVITY	OPCTV PROC SPECIFIC GRAVITY READ TOO SOON
G	BPI	0160738	100476	BA	SA	A1405	A		D		RDS D BTTRY PILOT & 3 OTHER CELLS LO SPEC GRAVITY	INCOMPLETE ELECTROLYTE MIXING
G	BPI	0163058	102176	BA	SA	A14	D		U		RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BPI	016459	110476	BA	SA	A14	C		U		RDS B PILOT CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE
G	BPI	0163058	112176	BA	SA	A14	D		U		RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BPI	016584	120276	BA	SA	A14	D		U		RDS B BTTRY PILOT CELL 27 LO SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BPI	017023	120976	BA	SA	A14	D		U		RDS B ONE CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BPI	017024*	010477	BA	SA	M14	A	R	U	2	B CELLS SPECIFIC GRAVITY FOUND BELOW 1.2. EVALUA-	-TION REVEALED ADEQUATE CAPACITY
G	BPI	017464	022477	BA	SA	M14	C	R	U		RDS BATTERY B HAD ONE CELL BELOW MINIMUM SPECIFIC-	-GRAVITY. ADEQUATE CAPACITY AVAILABLE
G	BPI	017463	031777	BA	SA	M14	C	R	U		SPECIFIC GRAVITY FOUND LOW IN 5 CELLS OF RDS BTTRY-	-"A". ADEQUATE CAPACITY AVAILABLE
G	BPI	018096A	042177	BA	SA	M14	C	R	U		RDS BATTERY B,CELL 27 FOUND TO HAVE LOW SPECIFIC -	-GRAVITY OF 1.191. FULL CAPACITY AVAIL
G	BPI	018096B	042777	BA	SA	M14	C		U		SPECIFIC GRAVITY OF LO MARGINAL CELLS ADJUSTED OF-	-RDS BATTERY B. FULL CAPACITY AVAILABLE
G	BPI	0184628	061677	BA	SA	T1432	C	V	D		SPECIFIC GRAVITY OF CELL 27 OF RDS BATTERY B LOW	WATER ADDED THEN TESTED TOO SOON
G	BPI	0194728	092977	BA	SA	A1432	C	R	D		SPECIFIC GRAVITY OF CELL 12 OF RDS BATTERY "A" LOW	WATER ADDED,CHARGE INSUFFICIENT TO RES
G	BPI	0195428	102077	BA	SA	A1432	C	R	D		SPECIFIC GRAVITY OF 3 CELLS OF RDS BATTERY "D" LOW	WATER ADDED,MIXING WAS INADEQUATE
G	BPI	020176	122277	BA	SA	A14	C	R	U		SPECIFIC GRAVITY ON RDS BATTERY "A",CELL 12 LOW	EQUALIZING CHARGE FOR 8 HOURS CORRECTED
G	BPI	022664	083178	BA	SA	A14	C	R	U		RDS BATTERY A, CELL 12 LO SPECIFIC GRAVITY READING	EXACT CAUSE UNKNOWN
G	BPI	027985	110179	BA	SA	A1420	C		U		SPECIFIC GRAVITY OF CELL 48 OF RDS BATTERY C LOW	CELL REPLACED,WOULD NOT TAKE EQUAL CHARGE
G	BPI	030237	012480	BA	SA	A1420	C		U		RDS C BTTRY CELL 14 LOW SPECIFIC GRAVITY RDG	EFFECTIVE CELL REPLACED
G	BPI	031176	050180	BA	SA	A1420	C		U		RDS BTTRY "A" CELL 7 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BPI	031848	071080	BA	SA	A1420	C		U		RDS C BTTRY CELLS 35,54 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BPI	032297	080780	BA	SA	A14	C		U		RDS C BTTRY CELLS 38,39,56 LOW SPECIFIC GRAVITY	VENDOR RECOM INCRS IN FLOAT VOLTAGE LEVEL
G	BPI	032656	091180	BA	SA	A1420	C		U		RDS D BATTERY CELL 12 LOW SPECIFIC GRAVITY RDG	CELL DID NOT ADQ RESPOND TO EQUALIZG CHRG
G	BPI	033544	121180	BA	SA	A1402	C		D		21 CELLS OF RDS "A" BATTERY LOW SPECIFIC GRAVITY	CELL TERMINALS INADQ CLEANED BY MAINT PER
G	BPI	037338	010281	BA	SA	A1420	C	R	U		RDS CH D BATTERY CELL 56 HAD LOW SG,WOULD NOT RES-	-POND TO EQUALIZING CHARGE.
G	BPI	038785	091581	BA	SA	A1420	C		U		"A" RDS BTTRY CELL #5 LOW SPECIFIC GRAVITY	CELL DIDN'T RESPOND ADQ TO EQUALIZG CHRG
G	FPI	021433	053178	BA	FP	A1420	A		U		LO S.G. OF BTTRY A2 CELL 1	BAD CELL IN BATTERY
G	FPI	031743*	062880	BA	FP	A14	A		T	2	DIESEL FIRE PUMP 24V BATT CELLS A2-6,B2-1 LOW S.G.	CHARGER OOS DURING SURVEILLANCE
G	PBI	014211	012976	BA	NN	A14	B		U		B BTTRY CAPACITY BELOW DESIGN	CELL S.G. IN LO RNG, PARTIAL ACID RPLCD
G	BPI	038112	001581	BA	SA	A1602	A	C	D		FOUND PILOT CELL IN CH A RDS POWER SUPPLY WITH A -	-HIGH ELEC LEVEL. POSSIBLY OVERFILLED

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE CAUSE

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	EN2	036943A	040781	BA	ST	A1602	N	C	D	2	ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF ST -	-BTTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943C	040781	BA	DB	A1602	N	C	D		ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF DIE-	-SEL GENERATOR BATTERY. PERSONNEL ERROR
B	D81	021587	042778	BA	FP	A17	N		U		4 CELLS OF ENGINE BTTRY W/ ELECTROLYTE BELOW PL TE	ELEC. ADDED BROUGHT CELLS UP TO NORMAL
B	D81	025397	020879	BA	FP	A17	D		U		ELECTROL LEVEL IN 4 CELLS FOUND LO IN DSL ENG STA-	-RTING BTTRY. DIESEL STILL STARTED
G	BP1	015326A	072276	BA	SA	A17	C		U		RDS BATTERY D PILOT CELL LOW ELECTROLYTE LEVEL	EXACT CAUSE UNKNOWN
G	BP1	015327A	072876	BA	SA	A17	C		U		RDS BTTRY C PILOT CELL LOW ELECTROLYTE LEVEL	UNKNOWN CAUSE
G	BP1	016073B	100376	BA	SA	A17	A		U		RDS D BTTRY PILOT & 3 OTHER CELLS LO ELECTROLYTE -	-LEVEL. UNKNOWN CAUSE
G	BP1	018462A	061677	BA	SA	A17	U	R	U		WATER ADDED TO CELL 27 OF RDS BATTERY "B"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	019472A	092977	BA	SA	A17	U	R	U		WATER ADDED TO CELL 12 OF RDS BATTERY "A"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	019542A	100877	BA	SA	A17	U	R	U		WATER ADDED TO 3 CELLS OF RDS BATTERY "D"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	021307	050478	BA	FP	A17	D		U		FIRE PUMP DIESEL STARTG BTTRY A CELLS 1,3,5 LO --	ELECTROLYTE SOLN. EXACT CAUSE UNKNOWN
G	BP1	021519	052578	BA	FP	A1705	D		D		FIRE PUMP DIESEL STARTG BTTRY "A" CELLS 2,4,6 LO--	ELECTROLYTE SOLN. INADQ MAINTENANCE PROC
G	EN2	036943B	040781	BA	ST	A1702	N	C	D	2	ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF ST B-	-TTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943D	040781	BA	DB	A1702	N	C	D		ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF DIES-	-EL GENERATOR BATTERY. PERSONNEL ERROR
G	BP1	0152488	063076	BA	ST	A18	N		D		LOAD ON BTTRY REDUCED VOLTAGE & SPECIFIC GRAVITY	STATION BATTERY CHARGER HAD FAILED
G	EN2	032981A	032381	BA	AM	B1834	N		D		POST TREATMENT MON 2011-K615A BATTERY DRAINED	BATTERY CHARGER 2AB 24/48 VDC FAILED
G	FP1	171811	123081	BA	NM	B18	N		D	2	LOW VOLTAGE FROM DIVISION I 24 VCDC BATTERIES.CAUS	-ED ERRATIC READINGS ON LRM & SRM INST
C	CC1	037262	050681	BA	NN	M20	A		U		VOLT OF CELL 18 OF 125 VDC BATTERY 1B FOUND .09V -	-BELOW MINIMUM. FULL CAPACITY AVAILABLE
C	MI2	026979	080379	BA	NN	M20	A		U		VARIOUS CELLS REPLACED IN 2018 BTTRY (4 CELLS)	REDUCTION IN CELL VOLT. FULL CAPACITY
C	PA1	025917	040479	BA	ST	B2005	A	C	D		2 CELLS IN STATION BATTERY #2 BURST WHILE TAKING -	-VOLTAGE READINGS. FULL CAPACITY AVAI
W	BV1	028147	092179	BA	NN	M2010	A		T		CELL #6 OF BATTERY NO. 1 COULD NOT HOLD ORIGINAL -	-VOLTAGE. FULL BATTERY CAPACITY AVAIL.
W	BV1	039154	101781	BA	NN	M20	E	R	U		2 OF 60 CELLS VOLTAGE FOUND DROPPED BY .05 VDC	NO CAUSE GIVEN,BATTRY HAD FULL CAPACITY
W	TR1	032622	090390	BA	FW	B20	N		U		DIESEL-DRIVEN AFWP FAILD TO START FROM MANUAL SIG	FAILED STARTING BATTERY
W	3U3	039363	111281	BA	NN	B20	A	R	U		"3A" 125 VDC FAIEED TO HOLD A CHARGE	BEING EVALUATED W/ MANUFACTURER
W	EP1	019861	120577	BA	ST	A20	E		U		CELL VOLTAGE ON CELL 18 OF BANK 1 FOUND LOW	NO CAUSE FOUND,CELL REPLACED
G	BF1	038085	072281	BA	NN	A20	U		U		250 VOLT MAIN BATTERY TAKEN OOS TO BYPASS A CRACK-	-ED CELL.
G	BP1	032023	071880	BA	SA	A20	D		U		RDS C BTTRY PILOT CELL UNIT-9 INTERNAL RESISTANCE-	-INCRS. CAUSE UNKNOWN
G	BP1	038592	083181	BA	ST	A2014	C	C	D		LOW SG IN CELL 43 OF ST BTTRY,CELL FOUND CRACKED.-	-THIS LEAD TO DILUTION.CRACKED WHEN MOVED
G	FP1	019457	102077	BA	ST	A20	U		U		STATION BATTERY "B" FOUND TO HAVE CRACKED CELL	NO CAUSE KNOWN FOR CRACKED CELL #228
G	FP1	026922	090479	BA	ST	A20	N		U		LEAKING CELL NOTED IN BATTERY "B". BATTERY TEMPOR-	-ARILY INOP WHILE CELL JUMPERED
G	QC1	019222	092477	BA	NN	M2010	U		T		BATTERY SYSTEM TAKEN OUT OF SERVICE	REPLACED 12 WEAK CELLS,NORMAL END OF LIFE
C	AR2	027808	121179	BC	NN	B21	N	S	D		BATTERY CHARGER 2D32 AC BREAKER TRIPPED	CURRENT SURGED WHEN SHIFTING TO FLOAT

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE CAUSE

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	HN1	0146088	042576	BC	NN	D2122	N		U		VOLTG REG SPIKING TO 200 AMPS THEN SHUTTING OFF	FAULTY PHASING CRD IN CURRENT LIMITER CKT
W	IP3	036207	012481	BC	NN	B2123	N		U		OUTPUT FROM CHARGER #32 DISCOVERED DROPPING	VOLTAGE AND CURRENT CONTROLLER REPLACED
W	PP2	014599	041476	BC	NN	B2133	B		U		#12 BATTERY CHARGER FAILED DISABLED "B" DC POWER	VOLTAGE CNTRL CRD LOOSE IN ITS SOCKET
W	SA2	038319	072481	BC	NN	B2101	N	U	D		2C1 BATTERY CHARGER DISCOVERED TRIPPED. VOLTAGE -	-SETTING WAS INCORRECTLY SET
G	EN2	030651*	032580	BC	ST	A2122	G		U	2	EMER STATION BATT CHRGR 2G,2J FAILD TO HOLD LOAD	VOLTG CNTRL & CURR LMT MODULES TUNED
G	PI1	033899	082180	BC	NN	B2113	N		U		"A" 125 VDC CONTROL BATT CHARGER INOPERABLE	VOLTAGE REGULATOR ELECTRONIC MODULES FPLC
G	QC2	018460	060977	BC	NN	E2101	N	U	D		BATTERY CHARGER SUPPLYING CURRENT TO BATTERY FOUN-	-D LOW. FLOATING POTENTIOMETER SET LOW
G	VY1	G162178	101376	BC	UP	B21	N	R	U		CNTRL BTTRY CHARGING POWER SUPPLY FAILED	INOPERATIVE VOLTAGE REGULATOR CIRCUIT
C	PA1	016178	102076	BC	NN	E2201	N		D		DC BUS-2 VOLTG FELL;VOLTG ON ASSOC AC BUSES FELL	CURR LMTR & OUTPUT BRKR SETTING ERRONEOUS
G	BR1	019389	102177	BC	NN	B2206	B		U		BATT CHRGR DC OUTPT FUSE FAILD WHEN CHRG BATT 2B-2	HI CURR/TEMP CAUSD SOLDERD LINKG SEPARATE
G	DR1	018553B	072977	BC	FP	B22	N		U		FUSE FOUND BLOWN IN DIESEL FIRE PUMP BATTERY CHAR-	-GER.
G	EN2	0307118	032780	BC	ST	A22	G		U		STATION BATT CHRG 2C FAILED TO MAINTAIN LOAD	CURRENT LIMIT MODULE NEEDED ADJUSTMENT
G	CO1	022101A	062778	BC	NN	B2333	N		T		1A 250V BTTRY CHRGR TIE BREAKER TRIPPED	POOR CNNCTR CNTCTS IN CURRENT MODULE
G	QC2	018164	031777	BC	NN	C23	U		U		UNITS BATTERY CHARGER APPARENTLY INOPERABLE	FAULTY INDUCTIVE CURRENT CONTROL CIRCUIT
C	SL1	038775	091881	BC	NN	B24	A	R	U		1A BATTERY CHARGER SHUTDOWN ON HIGH VOLTAGE	HIGH VOLTAGE DEVICE FOUND DEFECTIVE
W	JF1	032504	082580	BC	SW	B24	N	S	U		SW 8 DC DISTRIBUTION SYS INOP NO OUTPUT FROM BATT-	-CHRGR 4. HV S/D RELAY ACTUATED
W	SA2	038327	081281	BC	NN	B24	N		U		2B1 BATTERY CHARGER WOULD NOT PICK UP 2B VDC LOAD	HIGH VOLTAGE CUT-OUT ACTUATED
W	BV1	037757	061581	BC	NN	B2506	N	R	D		#2 BATTERY CHARGER OUTPUT BREAKER FAILED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAI
W	BV1	038347	080581	BC	NN	B2506	N	R	D		#2 BATTERY CHARGER OUTPUT BREAKER TRIPPED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAI
W	IP3	014709	051076	BC	NN	B2630	A		U		BTTRY CHRGR TROUBLE ALARMED CHARGER FAN HAD TRPD	AC FAN MTR INOP EXPOSED WIRE BLEW A FUSE
W	BV1	021043	032078	BC	NN	E2713	N		U		DECR #4 DC BUS VOLTAGE DUE TO A FAULTY BTTRY CHRGR	FAILD COLLECTR RESISTR IN CHRGR CNTRL CKT
G	DC1	0182938	062877	BC	ST	B2713	U		U		BATTERY CHARGER FOR SWITCHING STATION BATTERY FOU-	-ND OOS AFTER 11 DAYS
W	HN1	014608A	042576	BC	NN	D2833	N		U		BTTRY CHARGER A WENT INTO OVERCHARGE	FAULTY CNICT ON CHARGER CONTROL TIMER
W	PP1	033222	110580	BC	NN	A2911	A		U		#12 BTTRY CHRGR FAILD TO PROVIDE NORMAL OUTPUT	FIRING CARD B NOT PROVIDING PULSE TO SCR
G	BP1	015248A	063076	BC	ST	B29	N		U		STATION BATTERY CHARGER FAILED	DEFECTIVE SILICON RECTIFIERS
G	CO1	037646	050581	BC	ST	G29	B		U		HIGH RIPPLE FROM BATTERY CHARGER WHICH FAILED INV-	-ERTER 1A. FAILED SCR
G	EN2	030711A	032780	BC	ST	A29	G		U	2	STATION BATT CHRG 2A,2B FAILED TO MAINTAIN LOADS	SILICON CNTRL RECTIFIERS NEED LOAD BALANC
B	CR3	038100	071481	BA	ST	B3002	N	C	D		STATION BATTERY SHORTED DURING MAINTENANCE	PERSONNEL ERROR. CAUSED REACTOR TRIP
W	SE1	032338	080780	BA	DB	B30	N		U		D/G BTTRY 1B-8 CELL 51 SHORTED AND FAILED	NO CAUSE GIVEN
G	EN2	033891	081180	BA	ST	B30	M		U		DC BATT GROUND ON 2B STATION SERVICE BATTERY	NO CAUSE GIVEN
B	DE3	022183	072778	BA	NN	B33	B		U		SMOKE FROM I TERMINAL OF I&C BATTERY 3C8	TERMINAL DFCTV/CNNCTNS FOUND DEFECTIVE
W	BV1	038825	091081	BC	ST	B33	N		U		#4 STATION BATTERY CHARGER TAKEN OUT OF SERVICE	BAD ELECTRICAL CONNECTION IN OUTPUT

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY FAILURE CAUSE

NSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	MG1	039186	101981	BA	ST	A3308	M		T		CELL TO CELL RESISTANCE IN 3 CELLS FOUND HIGH	CORROSION OF TERMINAL CONNECTIONS
W	RO2	021898	071678	BA	ST	B3311	N		D		PLASTIC TOP OF 2 STATN "A" BATT CELLS ON FIRE	RESISTNC HEATG OF STRAP-CELL TERMINAL
W	SA1	038834	091881	BA	FP	B33	N		U		BATTERY CABLE CLAMP FOUND ARCING AND CRACKED	CLAMP WAS REPLACED ON #2 FIRE PUMP BTTRY
G	BF2	015394	070976	BA	NN	B3302	M	U	D		NEUTRON MONITORING BATTERY 2A MADE INOPERABLE	CNNCTR BROKEN OFF A CELL POST PERS ERROR
G	BF2	025671	041979	BA	SP	B3302	N	C	D		BROKEN TERMINAL DISCOVERED ON S/D BOARD "D" BTTRY	PERSONNEL ERROR. ALSO AFFECTED UNIT 1
G	BP1	015444	081276	BA	DB	B33	N		T		EMERGENCY DIESEL GENERATOR DID NOT START DUE TO L-	-OOSE BATTERY CONNECTION.
G	BP1	0177049	033077	BA	UP	B3304	N	C	D	4	NO OUTPUT FROM ALL UPS BATTERY BANKS	CONNECTORS NOT TIGHTENED DURING INSTAL
G	BP1	019025A	082977	BA	FP	B3302	N		D		DIESEL FIRE PUMP "A" BATTERY FOUND WITH NO OUTPUT	CONNECTORS NOT TIGHTENED
G	BP1	025637A	032579	BA	NN	A3308	B	R	T		BATTERY 182 VOLTAGE FELL TO 102.5V THEN ROSE TO -	-118V. CORRODED AND LOOSE BTTRY CONNECT
G	BR1	0256378	032779	BA	NN	A3308	B	R	T		BTTRY 181 VOLTAGE FELL TO 96.8V THEN ROSE TO 118V	CORRODED AND LOOSE BTTRY CONNECTORS
G	CO1	0221018	052778	BC	NN	B3304	N	U	D		1A 250V BTTRY CHRGR INPUT BREAKER TRIPPED	LOOSE CNNCTN AT CHRGR INPUT BRKR PHASE A
W	SA1	020738A	020178	BA	NN	A34	N		U		1C 125V BATTERY VOLTAGE LOW	1C1,1C2 BATT CHARGER D.C. BRKRS TRPD
W	SU2	038936A	100181	BA	FP	B34	A		D		SMOKE DETECTOR BATTERY FAILED	CHARGER NOT CHARGING BATTERY
W	TU3	0335308	121180	BA	NN	T34	N	U	T		4B 125 VDC BATT OOS,TECH SPEC EXCEEDED	PROBLEM W/ ASSOCIATED BTTRY CHARGER
G	DR1	018553A	072977	BA	FP	B3413	N	C	D	2	DIESEL FIRE PUMP BATTERIES FAILED TO START DIESEL	FAILED FUSE FROM BATTERY CHARGER CIRCUIT
G	DR3	016265A	101876	BA	NN	A34	A		D		BATTERY IN A DEGRADED CONDITION	CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"
G	MO1	166730A	061591	BA	NN	A3401	A		D		250 VDC BATTERY INADVERTENTLY DISCHARGED	PERS DISCONNECTED TEMP BATTERY CHARGER
G	DC1	018293A	062877	BA	SY	B34	U	C	D		ONE OF TWO SWITCHING STATION BATTERIES FOUND OOS -	-FOR 11 DAYS. BATTERY CHARGER FAILED
G	VY1	0162[illegible]4	101376	BA	UP	A34	N	R	U		UPS-1B CNTRL PWR BTTRY VOLTAGE W/S LOW	CNTRL BATT CHRGNG POWER SUPPLY FAILED
G	VY1	018407[illegible]	031877	BA	UP	A3413	N	R	D		UPS-1B ALARMED DUE TO LOW VOLTAGE,CAUSED SCRAM	CAPACITOR FAILED IN CHARGING POWER SUPPLY

APPENDIX H
ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS CAUSED BY HUMAN FACTORS

CODES USED IN LER ONE-LINE DESCRIPTIONS

NSSS VENDOR

CODE	DESCRIPTION
B	BABCOCK & WILCOX
C	COMBUSTION ENGINEERING
W	WESTINGHOUSE
G	GENERAL ELECTRIC

EVENT CLASSIFICATION

CODE	DESCRIPTION
D	FREQUENCY
T	AGE
U	UNKNOWN

COMPONENT

CODE	DESCRIPTION
BA	BATTERY
BC	BATTERY CHARGER

FAILURE CAUSE

CODE	DESCRIPTION
00	UNKNOWN
01	PERSONNEL OPERATION
02	PERSONNEL MAINTENANCE
03	PERSONNEL TESTING
04	DESIGN/FABRICATION/CONSTRUCTION/QUALITY CONTROL
05	DEFECTIVE PROCEDURES
06	EXTREME ENVIRONMENT
08	CORROSION
10	NORMAL WEAR/NATURAL END OF LIFE
11	ELECTRICAL MALFUNCTION
12	MECHANICAL MALFUNCTION
13	PIECE PART FAILURE
14	LOW SPECIFIC GRAVITY
15	STRATIFICATION
16	HIGH ELECTROLYTE SOLUTION LEVEL
17	LOW ELECTROLYTE SOLUTION LEVEL
18	INSUFFICIENT CHARGE
20	DEFECTIVE/WEAK CELLS
21	VOLTAGE REGULATOR MALFUNCTION
22	CURRENT LIMITER MALFUNCTION
23	CURRENT CONTROLLER MALFUNCTION
24	VOLTAGE LIMITER MALFUNCTION
25	THERMAL OVERLOAD PROTECTION
26	COOLING FAN/VENTILATION MALFUNCTION
27	CHARGE CONTROL MALFUNCTION
28	CHARGE CONTROL TIMER MALFUNCTION
29	RECTIFIER PROBLEM
30	SHORT CIRCUIT
32	ELECTROLYTE DILUTION
33	FAULTY CABLE/CONNECTORS
34	CHARGER MALFUNCTION

FAILURE MODE

CODE	DESCRIPTION
A	REDUCED CAPABILITY
B	NO OUTPUT
C	UNKNOWN/UNSPECIFIED/OTHER
D	HIGH CURRENT/VOLTAGE OUTPUT
E	LOW OUTPUT VOLTAGE
G	HIGH AC RIPPLE ON DC OUTPUT
M	MAINTENANCE REPLACEMENT
T	TEST NOT PERFORMED

TYPE EVENT

CODE	DESCRIPTION
B	RECURRING COMMON CAUSE
C	COMMON CAUSE
R	RECURRING
S	COMMAND FAULT
T	RECURRING COMMAND FAULT
U	COMMON CAUSE COMMAND FAULT
V	RECURRING COMMON CAUSE COMMAND FAULT
BLANK	RANDOM

ACTIVITY RESULTING IN DISCOVERY

CODE	DESCRIPTION
A	TESTING(UNSPECIFIED)
B	NORMAL LOAD TESTING
C	MONTHLY TESTING
D	WEEKLY TESTING
E	QUARTERLY TESTING
F	REFUELING TESTING
G	18 MONTH TESTING
H	5 YEAR TESTING
M	MAINTENANCE
N	NORMAL PLANT OPERATION
R	RECORDS REVIEW
U	UNKNOWN

FLAGGING FIELD

CODE	DESCRIPTION
A	FAILED COMPONENT CAUSED AN ACCIDENT
B	COMPONENT FAILED TO MITIGATE AN ACCIDENT
C	SAFETY SIGNIFICANT
D	FAIL # NOT KNOWN
E	CELL # NOT KNOWN
F	FAIL # AND CELL # NOT KNOWN
N	FROM NSIC DATA BASE

SYSTEM IDENTIFICATION CODES

CODE	DESCRIPTION
AM	AREA MONITOR SYSTEM
DB	EMERGENCY DIESEL GENERATOR
ES	ENGINEERED SAFETY FEATURE
FP	FIRE PROTECTION SYSTEM
FW	FEEDWATER SYSTEM
NM	NEUTRON MONITORING BATTERY
NN	UNKNOWN/UNSPECIFIED/OTHER
SA	AUTOMATIC (REACTOR) DEPRESSURIZATION (ADS)
SP	SPECIAL USE BATTERIES
ST	STATION BATTERIES/CHARGERS
SW	SERVICE WATER BUILDING BATTERIES/CHARGERS
SY	SWITCHYARD BATTERIES/CHARGERS
UP	UNINTERRUPTIBLE POWER SYSTEM (UPS)

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS CAUSED BY HUMAN FACTORS

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
B	CR3	017166A	011277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166B	020277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166C	020977	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	021165	040578	BA	NN	T02	R	V	D		WRONG BTTRY CELLS MONITORED FOR WEEKLY BATT SURV	PERSONNEL NOT FOLLOWING PROCEDURES
B	CR3	038100	071481	BA	ST	B3002	N	C	D		STATION BATTERY SHORTED DURING MAINTENANCE	PERSONNEL ERROR. CAUSED REACTOR TRIP
B	DB1	022362	090578	BA	ST	T02	R	U	D		STATION BATTERIES WKLY SURV TEST NOT DONE ON TIME	MISUNDERSTANDING BTWN PERSONNEL
B	DE3	015532	081876	BA	NN	T05	R	U	D		125-VDC INSTR & CNTRL BATTERIES NOT LOAD TESTED	DFCTV PROC: WRONG DATA IN SURV PRINTOUT
C	AR2	026489	052279	BA	ST	T03	R	U	D		SURVEILLANCE NOT PERFORMED ON STATION BATTERIES	PERSONNEL OVERSIGHT
C	CC2	017344	021777	BA	NN	B01	N	S	D		#11 125 VDC BATTERY INADVERTENTLY TAKEN OUT OF SE-	-RVICE. SUPERVISOR GAVE PERMISSION
C	PA1	016178	102076	BC	NN	F2201	N		D		DC BUS-2 VOLTG FELL;VOLTG ON ASSOC AC BUSES FELL	CURR LMTR & OUTPUT BRKR SETTING ERRONEOUS
C	PA1	025917	040479	BA	ST	B2005	A	C	D		2 CELLS IN STATION BATTERY #2 BURST WHILE TAKING -	-VOLTAGE READINGS. FULL CAPACITY AVAI
C	PA1	036000*	010681	BA	ST	B02	U	U	D	2	OUTPUT BREAKER FOR BOTH STATION BATTERIES WERE OP-	-ENED FOR 1 HOUR. PERSONNEL ERROR
C	SL1	037962	062481	BC	NN	T02	R	U	D		SURVEILLANCE REQUIREMENTS NOT MET ON "AB" BATTERY-	-CHARGER. MISINTERPRETATION OF TECH SPEC
W	BV1	017119A	020477	BA	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON #3 & #4 STATIO-	-N BATTERIES. PERSONNEL ERROR
W	BV1	0171198	020477	BC	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON CHARGERS ASSOC-	-IATED WITH #3 & #4 STATION BTTRY. PERSON
W	DC1	025643	032379	BC	NN	D01	N	U	D		125 VDC EQUALIZING CHARGE TOO HIGH, FAILED INVERT-	-ER, CAUSED SCRAM AND SI. NO CAUSE
W	DC2	039127	101981	BA	NN	T05	R	U	D		SURVEILLANCE NOT PERFORMED ON "N" TRAIN BATTERY	PROCEDURE LACKED SIGNOFF
W	JF1	027181	090679	BA	NN	T03	R	U	D		QUARTERLY AUXILIARY BUILDING BATTERY VERIFICATION-	-NOT PERFORMED ON TIME. PERSONNEL
W	JF1	032687	091180	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LO BATT CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033007	102180	BA	SW	A1404	A		D		SW "A" BTTRY SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033163	102880	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM PROX/ACID RES/POST SEAL DESIGN
W	NA1	026565	062879	BA	DB	T05	R	U	D		7 DAY SURVEILLANCE OF EMERGENCY DIESEL GENERATOR -	-BATTERIES EXCEEDED INTERVAL. PROCEDURAL
W	NA1	026656	073179	BA	DB	T05	R	U	D		DIESEL GENERATOR BATTERIES SURVEILLANCE NOT DONE	TIME LAG IN IMPLEMENTING NEW PROCEDURES
W	NA1	036491A	022881	BA	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	NA1	0364918	022881	BC	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	NA2	036417	022081	BA	DB	T05	R	U	D		DATA FROM TWO TESTS ON 2J DIESEL BATTERY FOUND NO-	-T USABLE. NOT COMPARED WITH INITIAL CON
W	PR1	026268	053179	BA	FP	T05	R	U	D		DIESEL DRIVEN WEEKLY BATTERY INSPECTION NOT DONE	PROCEDURES WERE DEFECTIVE
W	PR1	030917	033180	BA	ST	T02	R	U	D		INDIVIDUAL FLOAT CELL VOLT MEAS NOT DONE IN STATI-	-ON BATTERY TEST. PERSONNEL OVERSIGHT
W	RO2	015515	071076	BA	NN	B02	M		D		BATTERY B LEADS WERE REMOVED RENDERING BATT INOP	PEPS FAILED TO COMPLY W/ T.S. 3.7
W	SA1	032162	072180	BA	EP	T02	R	U	D		92 DAY & 18 MON SURV NOT DONE ON 24 V STARTG BATT	ELECTRICIAN NOT COMPLETING JOB
W	SA2	038319	072481	BC	NN	B2101	N	U	D		2C1 BATTERY CHARGER DISCOVERED TRIPPED. VOLTAGE -	-SETTING WAS INCORRECTLY SET
W	SF1	032342A	081280	BA	DB	B05	U		D		D/G BTTRY 18-8 CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS CAUSED BY HUMAN FACTORS

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPES	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	SF1	0323428	081380	BA	DB	B05	U		D		D/G BTTRY 18-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	TP1	014563	032476	BA	ES	T05	R	U	D		ESF DC PWR SUPPLIES SURV REQ PERFORMD AT WRNG FREQ	PROCEDURE DID NOT USE FREQ REQ BY T.S.
W	TP1	020885	031778	BA	NN	T02	R	U	D		125 VDC ELECTRICAL SYS OP NOT VERIFIED WK OF 2-26	MAINT PERS FAILD TO INSURE SURV COMPLETED
W	TP1	025211A	011979	BA	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TP1	0252118	011979	BC	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TU3	022061A	122277	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	TU3	0220618	122977	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	YP1	0194768	101477	BC	NN	T01	N	U	D		NO. 1 BATTERY CHARGER CROSS TIED TO NO. 2 BATTERY	OVERSIGHT CAUSE LCO STATED IN TECH SPEC
W	ZI1	171128A	121281	BA	NN	B01	M	U	D		UNIT 2 212 BATTERY TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
W	ZI1	1711288	121281	BC	NN	B01	M	U	D		UNIT 2 212 CHARGER TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
W	ZI1	172130	121581	BA	NN	C05	U	U	D		EQUALIZING CHARGE NOT PLACED ON BATTERY 112	PROCEDURE NOT CLEAR ON COMMUNICATIONS
G	BF2	015394	070976	BA	NM	B3302	M	U	D		NEUTRON MONITORING BATTERY 2A MADE INOPERABLE	CNNCTR BROKEN OFF A CELL POST PERS ERROR
G	BF2	025671	041979	BA	SP	B3302	N	C	D		BROKEN TERMINAL DISCOVERED ON S/D BOARD "D" BTTRY	PERSONNEL ERROR. ALSO AFFECTED UNIT 1
G	BP1	016073A	100476	BA	SA	A1405	A		D		RDS D BTTRY PILOT & 3 OTHER CELLS LO SPEC GRAVITY	INCOMPLETE ELECTROLYTE MIXING
G	BP1	017704*	033077	BA	UP	B3304	N	C	D	4	NO OUTPUT FROM ALL UPS BATTERY BANKS	CONNECTORS NOT TIGHTENED DURING INSTAL
G	BP1	019025A	082977	BA	FP	B3302	N		D		DIESEL FIRE PUMP "A" BATTERY FOUND WITH NO OUTPUT	CONNECTORS NOT TIGHTENED
G	BP1	021519	052578	BA	FP	A1705	D		D		FIRE PUMP DIESEL STARTG BTTRY "A" CELLS 2,4,6 LO--	ELECTROLYTE SOLN. INADQ MAINTENANCE PROC
G	BP1	033544	121180	BA	SA	A1402	C		D		21 CELLS OF RDS "A" BATTERY LOW SPECIFIC GRAVITY	CELL TERMINALS INADQ CLEANED BY MAINT PER
G	BP1	033637	122380	BA	NN	T02	R	U	D		DC BATTERY MONTHLY TESTS OVERDUE	INADQ ADMIN CONTROLS & PERSONNEL ERROR
G	BP1	038112	081581	BA	SA	A1602	A	C	D		FOUND PILOT CELL IN CH A RDS POWER SUPPLY WITH A -	-HIGH ELEC LEVEL. POSSIBLY OVERFILLED
G	BP2	014651	021276	BA	NN	T05	R	U	D		MONTHLY INSTEAD OF QUARTERLY BATTERY P.T. PERFORMD	WRONG P.T. SCHEDULED BY MISTAKE
G	CO1	0221018	062778	BC	NN	B3304	N	U	D		1A 250V BTTRY CHRGR INPUT BREAKER TRIPPED	LOOSE CNNCTN AT CHRGR INPUT BRKR PHASE A
G	CO1	037938	052881	BA	ST	T03	R	U	D		SG TESTS FOR 125V 1AEB AND 250V 1B NOT PERFORMED -	-PROPERLY. PERSONNEL USED WRONG HYDROM
G	DA1	030982	041780	BA	NN	T02	R	U	D		WKLY BATT SURV DOCUMENTATION NOT COMPLETED	PERSONNEL ERROR-NONLIC. OPERATIONS PERS
G	DR2	039116	102181	BA	NN	T01	R	U	D		QUARTERLY STORAGE BATTERY SURVEILLANCE DONE 3 DAY-	-S LATE. OVERSIGHT BY OPERATING SHIFT
G	DR3	025951	042479	BA	NN	B01	N	U	D		UNIT 2'S BATTERY NOT RETURNED TO NORMAL LINEUP	BREAKER COULD HAVE BEEN SHUT AT ANY TIME
G	DR3	036569	030381	BA	NN	T01	R	U	D		WEEKLY STORAGE BATTERY SURVEILLANCE DONE 4 DAYS L-	-ATE. OVERSIGHT BY OPERATING SHIFT
G	EN1	021475*	060478	BC	SI	M1304	M		D	2	HEAT-SENSITIVE XSTR ON BATT CHRGR FIRING MODUL CRD	SHOULD BE A NON-HEAT-SENSITIVE TRANSISTOR
G	EN1	021719	062778	BA	DB	T02	R	U	D		WKLY PILOT CELL SURV OF 1C D/G BTTRY NOT COMPLET--	ED ON TIME. PERSONNEL OVERSIGHT
G	EN1	027782	112679	BA	NN	T03	R	U	D		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	EN2	022208	081678	BA	NN	T02	R	U	D		WKLY PILOT CELL SURV OF PLANT BATT NOT COMPLETED--	ON TIME. NOTICES ROUTED TO ABSENT PERS
G	EN2	026657	071879	BA	NN	T03	R	V	D		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS CAUSED BY HUMAN FACTORS

NSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	EN2	036943A	040781	BA	ST	A1602	N	C	D	2	ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF ST -	-BTTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943B	040781	BA	ST	A1702	N	C	D	2	ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF ST B-	-TTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943C	040781	BA	DB	A1602	N	C	D		ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF DIE-	-SEL GENERATOR BATTERY. PERSONNEL ERROR
G	EN2	036943D	040781	BA	DB	A1702	N	C	D		ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF DIES-	-EL GENERATOR BATTERY. PERSONNEL ERROR
G	MI1	014478	040776	BA	SY	T01	R	U	D		SWITCHYARD BTTRY SURVEILLANCE NOT PERFORMED W/IN--	REQ TIME PERIOD. PERSONNEL ERROR
G	MO1	166730A	061581	BA	NN	A3401	A		D		250 VDC BATTERY INADVERTENTLY DISCHARGED	PERS DISCONNECTED TEMP BATTERY CHARGER
G	MO1	166730B	061581	BC	NN	B01	A	U	D		TEMPORARY BATTERY CHARGER TAKEN OUT OF SERVICE	PERSONNEL ERROR,CAUSED BTTRY TO DISCHARGE
G	OC1	021497A	052478	BA	DB	T01	N	U	D		D/G BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	021497B	052478	BA	ST	T01	N	U	D		STATION BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	023298A	121378	BA	DB	T01	R	U	D		D/G BTTRY NOT TESTED/MONITORED W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	023298B	121378	BA	ST	T01	R	U	D		STATION BTTRY NOT TEST/MONITOR W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	030599A	022880	BA	ST	T02	R	U	D		MAIN STATION BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	OC1	030599B	022880	BA	DB	T02	R	U	D		DIESEL GENERATOR BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	OC1	038737	091181	BA	NN	T02	R	U	D		BATTERY SURVEILLANCE PROCEDURES FOUND NOT TO FULL-	-Y COMPLY WITH NEW REQUIREMENTS.
G	QC2	018460	060977	BC	NN	E2101	N	U	D		BATTERY CHARGER SUPPLYING CURRENT TO BATTERY FOUN-	-D LOW. FLOATING POTENTIOMETER SET LOW

APPENDIX I

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY ACTIVITY RESULTING IN DISCOVERY

CODES USED IN LER ONE-LINE DESCRIPTIONS

NSSS VENDOR

CODE	DESCRIPTION
B	BABCOCK & WILCOX
C	COMBUSTION ENGINEERING
W	WESTINGHOUSE
G	GENERAL ELECTRIC

EVENT CLASSIFICATION

CODE	DESCRIPTION
D	FREQUENCY
T	AGE
U	UNKNOWN

COMPONENT

CODE	DESCRIPTION
BA	BATTERY
BC	BATTERY CHARGER

FAILURE CAUSE

CODE	DESCRIPTION
00	UNKNOWN
01	PERSONNEL OPERATION
02	PERSONNEL MAINTENANCE
03	PERSONNEL TESTING
04	DESIGN/FABRICATION/CONSTRUCTION/QUALITY CONTROL
05	DEFECTIVE PROCEDURES
06	EXTREME ENVIRONMENT
08	CORROSION
10	NORMAL WEAR/NATURAL END OF LIFE
11	ELECTRICAL MALFUNCTION
12	MECHANICAL MALFUNCTION
13	PIECE PART FAILURE
14	LOW SPECIFIC GRAVITY
15	STRATIFICATION
16	HIGH ELECTROLYTE SOLUTION LEVEL
17	LOW ELECTROLYTE SOLUTION LEVEL
18	INSUFFICIENT CHARGE
20	DEFECTIVE/WEAK CELLS
21	VOLTAGE REGULATOR MALFUNCTION
22	CURRENT LIMITER MALFUNCTION
23	CURRENT CONTROLLER MALFUNCTION
24	VOLTAGE LIMITER MALFUNCTION
25	THERMAL OVERLOAD PROTECTION
26	COOLING FAN/VENTILATION MALFUNCTION
27	CHARGE CONTROL MALFUNCTION
28	CHARGE CONTROL TIMER MALFUNCTION
29	RECTIFIER PROBLEM
30	SHORT CIRCUIT
32	ELECTROLYTE DILUTION
33	FAULTY CABLE/CONNECTORS
34	CHARGER MALFUNCTION

FAILURE MODE

CODE	DESCRIPTION
A	REDUCED CAPABILITY
B	NO OUTPUT
C	UNKNOWN/UNSPECIFIED/OTHER
D	HIGH CURRENT/VOLTAGE OUTPUT
E	LOW OUTPUT VOLTAGE
G	HIGH AC RIPPLE ON DC OUTPUT
M	MAINTENANCE REPLACEMENT
T	TEST NOT PERFORMED

TYPE EVENT

CODE	DESCRIPTION
B	RECURRING COMMON CAUSE
C	COMMON CAUSE
R	RECURRING
S	COMMAND FAULT
T	RECURRING COMMAND FAULT
J	COMMON CAUSE COMMAND FAULT
V	RECURRING COMMON CAUSE COMMAND FAULT
BLANK	RANDOM

ACTIVITY RESULTING IN DISCOVERY

CODE	DESCRIPTION
A	TESTING(UNSPECIFIED)
B	NORMAL LOAD TESTING
C	MONTHLY TESTING
D	WEEKLY TESTING
E	QUARTERLY TESTING
F	REFUELING TESTING
G	18 MONTH TESTING
H	5 YEAR TESTING
M	MAINTENANCE
N	NORMAL PLANT OPERATION
R	RECORDS REVIEW
U	UNKNOWN

FLAGGING FIELD

CODE	DESCRIPTION
A	FAILED COMPONENT CAUSED AN ACCIDENT
B	COMPONENT FAILED TO MITIGATE AN ACCIDENT
C	SAFETY SIGNIFICANT
D	FAIL # NOT KNOWN
E	CELL # NOT KNOWN
F	FAIL # AND CELL # NOT KNOWN
N	FROM NSIC DATA BASE

SYSTEM IDENTIFICATION CODES

CODE	DESCRIPTION
AM	AREA MONITOR SYSTEM
DB	EMERGENCY DIESEL GENERATOR
ES	ENGINEERED SAFETY FEATURE
FP	FIRE PROTECTION SYSTEM
FW	FEEDWATER SYSTEM
NM	NEUTRON MONITORING BATTERY
NN	UNKNOWN/UNSPECIFIED/OTHER
SA	AUTOMATIC (REACTOR) DEPRESSURIZATION (ADS)
SP	SPECIAL USE BATTERIES
ST	STATION BATTERIES/CHARGERS
SW	SERVICE WATER BUILDING BATTERIES/CHARGERS
SY	SWITCHYARD BATTERIES/CHARGERS
UP	UNINTERRUPTIBLE POWER SYSTEM (UPS)

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY ACTIVITY RESULTING IN DISCOVERY

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
C	CC1	021533	050378	BA	NN	A00	A		U		125 VDC BTTRY 22 CELL 54 ICV BELOW MIN VOLTAGE	CAUSE UNKNOWN
C	CC1	037262	050681	BA	NN	M20	A		U		VOLT OF CELL 18 OF 125 VDC BATTERY 12 FOUND .08V -	-BELOW MINIMUM. FULL CAPACITY AVAILABLE
C	MI2	026979	080379	SA	NN	M20	A		U		VARIOUS CELLS REPLACED IN 2018 BTTRY (4 CELLS)	REDUCTION IN CELL VOLT. FULL CAPACITY
C	PA1	025917	040479	BA	ST	B2005	A	C	D		2 CELLS IN STATION BATTERY #2 SURST WHILE TAKING -	-VOLTAGE READINGS. FULL CAPACITY AVAL
C	SL1	038775	091881	BC	NN	B24	A	R	U		1A BATTERY CHARGER SHUTDOWN ON HIGH VOLTAGE	HIGH VOLTAGE DEVICE FOUND DEFECTIVE
W	BV1	016357	102476	BA	NN	M00	A		U		VOLTAGE DECREASED IN CELL 48 BY MORE THAN 0.05V	UNKNOWN. CELL 48 FROM BTTRY 3, 1650 A.H.
W	BV1	028147	092179	BA	NN	M2010	A		T		CELL #6 OF BATTERY NO. 1 COULD NOT HOLD ORIGINAL -	-VOLTAGE. FULL BATTERY CAPACITY AVAIL.
W	DC2	021633	060778	BA	NN	A14	A		U		CD PLANT BTTRY CELL 89 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	DC2	021632	061578	BA	NN	A14	A		U		AB PLANT BTTRY CELL 35 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	IP3	014709	051076	BC	NN	B2630	A		U		BTTRY CHRGR TROUBLE ALARMED CHARGER FAN HAD TRPD	AC FAN MTR INOP EXPOSED WIRE BLEW A FUSE
W	IP3	015138	060876	BC	NN	B13	A	S	U		# 31 BTTRY CHRGR AC BRKR TRIPD BATT CHRGR INOP	PRESSURE SENSOR FAILED TRIPPING BREAKER
W	JF1	032332A	081280	BA	SW	A14	A	R	U		SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	BATT PLACED ON EQUALIZE & S.G. ACCEPTABLE
W	JF1	0323329	082580	BA	SW	A14	A	R	U		SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	NO EXTERNAL CAUSE FOR LOW SPECIFIC GRAV
W	JF1	032687	091180	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LO BATT CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033007	102180	BA	SW	A1404	A		D		SW "A" BTTRY SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033163	102880	BA	SW	A1404	A		D		SW BLDG "A" BATT SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM PROX/ACID RES/POST SEAL DESIGN
W	NA1	171672	120181	BA	DB	A1410	A		T		1J EMERGENCY D/G INOP CELL S.G. BELOW 1.2	D/G BATTERY NEAR END OF USEFUL LIFE
W	PR1	033222	110580	BC	NN	A2911	A		U		#12 BTTRY CHRGR FAILD TO PROVIDE NORMAL OUTPUT	FIRING CARD B NOT PROVIDING PULSE TO SCR
W	SU2	038936A	100181	BA	FP	B34	A		D		SMOKE DETECTOR BATTERY FAILED	CHARGER NOT CHARGING BATTERY
W	SU2	0389368	100181	BC	FP	B00	A		U		BATTERY CHARGER FOR SMOKE DETECTOR BATTERY FAILED	NO CAUSE GIVEN
W	TU3	039363	111281	BA	NN	B20	A	R	U		"3A" 125 VDC FAILED TO HOLD A CHARGE	BEING EVALUATED W/ MANUFACTURER
G	BP1	0160738	100376	BA	SA	A17	A		U		RDS D BTTRY PILOT & 3 OTHER CELLS LO ELECTROLYTE -	-LEVEL. UNKNOWN CAUSE
G	BP1	016073A	100476	BA	SA	A1405	A		D		RDS D BTTRY PILOT & 3 OTHER CELLS LO SPEC GRAVITY	INCOMPLETE ELECTROLYTE MIXING
G	BP1	017024*	010477	BA	SA	M14	A	R	U	2	8 CELLS SPECIFIC GRAVITY FOUND BELOW 1.2. EVALUA-	-TION REVEALED ADEQUATE CAPACITY
G	BP1	038112	081581	BA	SA	A1602	A	C	D		FOUND PILOT CELL IN CH A RDS POWER SUPPLY WITH A -	-HIGH ELEC LEVEL. POSSIBLY OVERFILLED
G	DR3	016265A	101876	BA	NN	A34	A		D		BATTERY IN A DEGRADED CONDITION	CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"
G	DR3	016265B	101876	BC	NN	C00	A		U		CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"	UNKNOWN CAUSE
G	FP1	021433	053178	BA	FP	A1420	A		U		LO S.G. OF BTTRY A2 CELL 1	BAD CELL IN BATTERY
G	FP1	031743*	062880	BA	FP	A14	A		T	2	DIESEL FIRE PUMP 24V BATT CELLS A2-6,B2-1 LOW S.G.	CHARGER OOS DURING SURVEILLANCE
G	MO1	166730A	061581	BA	NN	A3405	A		D		250 VDC BATTERY INADVERTENTLY DISCHARGED	PERS DISCONNECTED TEMP BATTERY CHARGER
G	MO1	166730B	061581	BC	NN	B01	A	U	D		TEMPORARY BATTERY CHARGER TAKEN OUT OF SERVICE	PERSONNEL ERROR,CAUSED BTTRY TO DISCHARGE
B	OE3	022183	072778	BA	NN	B33	B		U		SMOKE FROM 1 TERMINAL OF I&C BATTERY 3CB	TERMINAL DEFTV/CNNCTNS FOUND DEFECTIVE

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY ACTIVITY RESULTING IN DISCOVERY

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
B	TI2	0230844	111278	BC	NN	B13	B		U	2	CHRGRS 2-2A/B FUSE BLEW NO CHRGR FOR BANK 2-2SB	DEFECTIVE GATING FILTER MODULES
W	BV1	022136	080478	BC	ST	B00	B		U		#4 STATION BTTRY CHRGR OUTPUT BRKR TRIPPED	IMPROPR OP OF CKTBRK.CAUSE OF TRP UNKNOWN
W	PR2	014599	041476	BC	NN	B2133	B		U		#12 BATTERY CHARGER FAILED DISABLED "B" DC POWER	VOLTAGE CNTRL CRD LOOSE IN ITS SOCKET
G	BR1	019389	102177	BC	NN	B2206	B		U		BATT CHRGR DC OUTPT FUSE FAILD WHEN CHRG BATT 2B-2	HI CURR/TEMP CAUSD SOLDERD LINKG SEPARATE
G	BR1	0256374	032579	BA	NN	A3308	B	R	T		BATTERY 182 VOLTAGE FELL TO 102.5V THEN ROSE TO -	-118V. CORRODED AND LOOSE BTTRY CONNECT
G	BR1	0256378	032779	BA	NN	A3308	B	R	T		BTTRY 181 VOLTAGE FELL TO 96.8V THEN ROSE TO 118V	CORRODED AND LOOSE BTTRY CONNECTORS
G	CD1	037646	050581	BC	ST	G29	B		U		HIGH RIPPLE FROM BATTERY CHARGER WHICH FAILED INV-	-ERTER 1A. FAILED SCR
G	PB3	014211	012976	BA	NN	A14	B		U		B BTTRY CAPACITY BELOW DESIGN	CELL S.G. IN LO RNG, PARTIAL ACID RPLCD
G	BP1	0153264	072276	BA	SA	A17	C		U		RDS BATTERY D PILOT CELL LOW ELECTROLYTE LEVEL	EXACT CAUSE UNKNOWN
G	BP1	0153268	072276	BA	SA	A1432	C		D		RDS BATTERY D PILOT CELL HAD LOW SPECIFIC GRAVITY	ADDITION OF WATER POSSIBLE CAUSE
G	BP1	0153274	072876	BA	SA	A17	C		U		RDS BTTRY C PILOT CELL LOW ELECTROLYTE LEVEL	UNKNOWN CAUSE
G	BP1	0153278	072976	BA	SA	T14	C	U	D		RDS BTTRY C PILOT CELL RDG LO SPECIFIC GRAVITY	DEFIV PROC SPECIFIC GRAVITY READ TOO SOON
G	BP1	016459	110476	BA	SA	A14	C		U		RDS B PILOT CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE
G	BP1	017464	022477	BA	SA	M14	C	R	U		RDS BATTERY B HAD ONE CELL BELOW MINIMUM SPECIFIC-	-GRAVITY. ADEQUATE CAPACITY AVAILABLE
G	BP1	017463	031777	BA	SA	M14	C	R	U		SPECIFIC GRAVIY FOUND LOW IN 5 CELLS OF RDS BTTRY-	-"A". ADEQUATE CAPACITY AVAILABLE
G	BP1	0180968A	042177	BA	SA	M14	C	R	U		RDS BATTERY B,CELL 27 FOUND TO HAVE LOW SPECIFIC -	-GRAVITY OF 1.191. FULL CAPACITY AVAIL
G	BP1	0180968B	042777	BA	SA	M14	C		U		SPECIFIC GRAVITY OF LO MARGINAL CELLS ADJUSTED OF-	-RDS BATTERY B. FULL CAPACITY AVAILABLE
G	BP1	0184628	061677	BA	SA	T1432	C	V	D		SPECIFIC GRAVITY OF CELL 27 OF RDS BATTERY B LOW	WATER ADDED THEN TESTED TOO SOON
G	BP1	0194728	092977	BA	SA	A1432	C	R	D		SPECIFIC GRAVITY OF CELL 12 OF RDS BATTERY "A" LOW	WATER ADDED,CHARGE INSUFFICIENT TO MIX
G	BP1	0195428	102077	BA	SA	A1432	C	R	D		SPECIFIC GRAVITY OF 3 CELLS OF RDS BATTERY "D" LOW	WATER ADDED,MIXING WAS INADEQUATE
G	BP1	020176	122277	BA	SA	A14	C	R	U		SPECIFIC GRAVITY ON RDS BATTERY "A",CELL 12 LOW	EQUALIZING CHARGE FOR 8 HOURS CORRECTED
G	BP1	022664	083178	BA	SA	A14	C	R	U		RDS BATTERY A, CELL 12 LO SPECIFIC GRAVITY READING	EXACT CAUSE UNKNOWN
G	BP1	027985	110179	BA	SA	A1420	C		U		SPECIFIC GRAVITY OF CELL 48 OF RDS BATTERY C LOW	CELL REPLACED,WOULD NOT TAKE EQUAL CHARGE
G	BP1	030237	012480	BA	SA	A1420	C		U		RDS C BTTRY CELL 14 LOW SPECIFIC GRAVITY RDG	DEFECTIVE CELL REPLACED
G	BP1	031176	050180	BA	SA	A1420	C		U		RDS BTTRY "A" CELL 2 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BP1	031848	071080	BA	SA	A1420	C		U		RDS C BTTRY CELLS 35,54 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BP1	032297	080780	BA	SA	A14	C		U		RDS C BTTRY CELLS 38,39,56 LOW SPECIFIC GRAVITY	VENDOR RECOM INCRS IN FLOAT VOLTAGE LEVEL
G	BP1	032656	091180	BA	SA	A1420	C		U		RDS D BATTERY CELL 12 LOW SPECIFIC GRAVITY RDG	CELL DID NOT ADQ RESPOND TO EQUALIZG CHRG
G	BP1	033544	121180	BA	SA	A1402	C		D		21 CELLS OF RDS "A" BATTERY LOW SPECIFIC GRAVITY	CELL TERMINALS INADQ CLEANED BY MAINT PER
G	BP1	037338	010281	BA	SA	A1420	C	R	U		RDS CH D BATTERY CELL 56 HAD LOW SG,WOULD NOT RES-	-POND TO EQUALIZING CHARGE.
G	BP1	038592	083181	BA	ST	A2014	C	C	D		LOW SG IN CELL 43 OF ST BTTRY,CELL FOUND CRACKED.-	-THIS LEAD TO DILUTION.CRACKED WHEN MOVED
G	BP1	038785	091581	BA	SA	A1420	C		U		"A" RDS BTTRY CELL #5 LOW SPECIFIC GRAVITY	CELL DIDN'T RESPOND ADQ TO EQUALIZG CHRG

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY ACTIVITY RESULTING IN DISCOVERY

NSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCUODEE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
B	DB1	025397	020879	BA	FP	A17	D		U		ELECTROL LEVEL IN 4 CELLS FOUND LO IN DSL ENG STA-	-RTING BTTRY. DIESEL STILL STARTED
G	BP1	016305A	102176	BA	SA	A14	D		U		RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	016305B	112176	BA	SA	A14	D		U		RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	016584	120276	BA	SA	A14	D		U		RDS B BTTRY PILOT CELL 27 LO SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	017023	120976	BA	SA	A14	D		U		RDS B ONE CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	021307	050478	BA	FP	A17	D		U		FIRE PUMP DIESEL STARTG BTTRY A CELLS 1,3,5 LO --	ELECTROLYTE SOLN. EXACT CAUSE UNKNOWN
G	BP1	021519	052578	BA	FP	A1705	D		D		FIRE PUMP DIESEL STARTG BTTRY "A" CELLS 2,4,6 LO--	ELECTROLYTE SOLN. INADQ MAINTENANCE PROC
G	BP1	032023	071880	BA	SA	A20	D		U		RDS C BTTRY PILOT CELL UNIT-9 INTERNAL RESISTANCE-	-INCRS. CAUSE UNKNOWN
B	DB1	020448	011978	BA	ST	A1415	E		U		1N BTTRY CELL 32 ELECTROLYTE S.G. DECRS .003 OOT	ELEC. STRAT. DUE TO LO BTTRY LOADING
W	BV1	039154	101781	BA	NN	M20	E	R	U		2 OF 60 CELLS VOLTAGE FOUND DROPPED BY .05 VDC	NO CAUSE GIVEN, BATTRY HAD FULL CAPACITY
W	JF1	021235A	041878	BA	SW	B00	E		U		2 CELLS IN SW BLDG "A" BATT BANK 1 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	JF1	0212358	041878	BA	SW	B00	E		U		2 CELLS IN SW BLDG B BATT BANK 2 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	NA2	036466*	021881	BA	DB	M14	E		U	2	BATTERIES FOR 2J & 2H DIESEL GENERATORS FAILED SU-	-RVEILLANCE TEST. 4 CELLS REPLACED
W	YR1	019861	120577	BA	ST	A20	E		U		CELL VOLTAGE ON CELL 18 OF BANK 1 FOUND LOW	NO CAUSE FOUND, CELL REPLACED
G	DR3	020853	032878	BA	NN	A10	F	R	T		24/48 V BTTRY FAILED THE REFUELING OUTAGE DISCHRG-	-TEST. 4 CELLS REPLCD NAT'L END OF LIFE
G	EN2	030651*	032580	BC	ST	A2122	G		U	2	EMER STATION BATT CHRGR 2G,2J FAILD TO HOLD LOAD	VOLTG CNTRL & CURR LMT MODULES TUNED
G	EN2	030711A	032780	BC	ST	A29	G		U	2	STATION BATT CHRG 2A,2B FAILED TO MAINTAIN LOADS	SILICON CNTRL RECTIFIERS NEED LOAD BALANC
G	EN2	0307118	032780	BC	ST	A22	G		U		STATION BATT CHRG 2C FAILED TO MAINTAIN LOAD	CURRENT LIMIT MODULE NEEDED ADJUSTMENT
W	MG1	039186	101981	BA	ST	A3308	M		I		CELL TO CELL RESISTANCE IN 3 CELLS FOUND HIGH	CORROSION OF TERMINAL CONNECTIONS
W	RD2	015515	071076	BA	NN	B02	M		D		BATTERY B LEADS WERE REMOVED RENDERING BATT INOP	PERS FAILED TO COMPLY W/ T.S. 3.7
W	ZI1	171128A	121281	BA	NN	B01	M	U	D		UNIT 2 212 BATTERY TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
W	ZI1	1711288	121281	BC	NN	B01	M	U	D		UNIT 2 212 CHARGER TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
G	RF2	015394	070976	BA	NM	B1302	M	U	D		NEUTRON MONITORING BATTERY 2A MADE INOPERABLE	CNNCTR BROKEN OFF A CELL POST PERS ERROR
G	EN1	021475*	060478	BC	ST	M1304	M		D	2	HEAT-SENSITIVE XSTR ON BATT CHRGR FIRING MODUL CRD	SHOULD BE A NON-HEAT-SENSITIVE TRANSISTOR
G	EN2	033891	081180	BA	ST	B30	M		U		DC BATT GROUND ON 2B STATION SERVICE BATTERY	NO CAUSE GIVEN
B	CR3	038100	071481	BA	ST	B3002	N	C	D		STATION BATTERY SHORTED DURING MAINTENANCE	PERSONNEL ERROR. CAUSED REACTOR TRIP
B	DB1	021587	042778	BA	FP	A17	N		U		4 CELLS OF ENGINE BTTRY W/ ELECTROLYTE BELOW PLATE	ELEC. ADDED BROUGHT CELLS UP TO NORMAL
C	AR2	026904	080979	BC	NN	B1306	N	C	D		BATTERY CHARGER 2D31 FAILED. DC OUTPUT LAMP SOCK-	-ET BURNED UP DUE TO HIGH HEAT, VOLT, DIST
C	AR2	027808	121179	BC	NN	B21	N	S	D		BATTERY CHARGER 2D32 AC BREAKER TRIPPED	CURRENT SURGED WHEN SHIFTING TO FLOAT
C	AR2	039245*	110581	BC	NN	B00	N		U	2	OUTPUT BREAKER OF BATTERY CHARGER 2D34 TRIPPED OP-	-EN TWICE. NO CAUSE COULD BE FOUND
C	CC2	017344	021777	BA	NN	B01	N	S	D		#11 125 VDC BATTERY INADVERTENTLY TAKEN OUT OF SE-	-RVICE. SUPERVISOR GAVE PERMISSION
C	PA1	016178	102076	BC	NN	E2201	N		D		DC BUS-2 VOLTG FELL; VOLTG ON ASSOC AC BUSES FELL	CURR LMTR & OUTPUT BRKR SETTING ERRONEOUS

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY ACTIVITY RESULTING IN DISCOVERY

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
C	SE1	020069	121677	BC	NN	B00	N		D		OUTPUT LOST FROM "AB" BATTERY CHARGER	POWER SUPPLY BKR TRIPPED FOR NO REASON
W	BV1	021043	032078	BC	NN	E2713	N		U		DECR #4 DC BUS VOLTAGE DUE TO A FAULTY BTTRY CHRGR	FAILD COLLECTR RESISTR IN CHRGR CNTRL CKT
W	BV1	037757	061581	BC	NN	B2506	N	R	D		#2 BATTERY CHARGER OUTPUT BREAKER FAILED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAD
W	BV1	038347	080581	BC	NN	B2506	N	R	D		#2 BATTERY CHARGER OUTPUT BREAKER TRIPPED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAD
W	BV1	038825	091081	BC	ST	B33	N		U		#4 STATION BATTERY CHARGER TAKEN OUT OF SERVICE	BAD ELECTRICAL CONNECTION IN OUTPUT
W	DC1	025643	032379	BC	NN	D01	N	U	D		125 VDC EQUALIZING CHARGE TOO HIGH, FAILED INVERT-	-ER, CAUSED SCRAM AND SI. NO CAUSE
W	HN1	014608A	042576	BC	NN	D2833	N		U		BTTRY CHARGER A WENT INTO OVERCHARGE	FAULTY CNTCT ON CHARGER CONTROL TIMER
W	HN1	014608B	042576	BC	NN	D2122	N		U		VOLTG REG SPIKING TO 200 AMPS THEN SHUTTING OFF	FAULTY PHASING CRD IN CURRENT LIMITER CKT
W	IP3	036207	012481	BC	NN	B2123	N		U		OUTPUT FROM CHARGER #32 DISCOVERED DROPPING	VOLTAGE AND CURRENT CONTROLLER REPLACED
W	IP3	038257	070681	BC	NN	B13	N	S	U		BATTERY CHARGER #32 DISCOVERED TRIPPED	FAILED OP AIR FLOW SENSOR SWITCH
W	JF1	032504	082580	BC	SW	B24	N	S	U		SW 6 DC DISTRIBUTION SYS INOP NO OUTPUT FROM BATT-	-CHRGR 4. MV S/D RELAY ACTUATED
W	RO2	021898	071678	BA	ST	B3311	N		D		PLASTIC TOP OF 2 STAIN "A" BATT CELLS ON FIRE	RESISTNC HEATG OF STRAP-CELL TERMINAL
W	SA1	020738A	020178	BA	NN	A34	N		U		1C 125V BATTERY VOLTAGE LOW	1C1,1C2 BATT CHARGER D.C. BRKRS TRPD
W	SA1	020738B	020178	BC	NN	B00	N		U	2	1C1,1C2 BATT CHARGER D.C. BRKRS TRIPPED	UNKNOWN CAUSE
W	SA1	038834	091881	BA	FP	B33	N		U		BATTERY CABLE CLAMP FOUND ARCING AND CRACKED	CLAMP WAS REPLACED ON #2 FIRE PUMP BTTRY
W	SA2	038319	072481	BC	NN	B2101	N	U	D		2C1 BATTERY CHARGER DISCOVERED TRIPPED. VOLTAGE -	-SETTING WAS INCORRECTLY SET
W	SA2	038327	081281	BC	NN	B24	N		U		2B1 BATTERY CHARGER WOULD NOT PICK UP 28 VDC LOAD	HIGH VOLTAGE CUT-OUT ACTUATED
W	SA2	038683	090681	BA	AM	a00	N		U		RAD MONITOR 2R12A BATTERY PACK FAILED	NO CAUSE GIVEN
W	SE1	032338	080780	BA	DG	B30	N		U		D/G BTTRY 18-8 CELL 51 SHORTED AND FAILED	NO CAUSE GIVEN
W	SU2	169141	081981	BC	FP	B13	N		U		SMOKE DET SYS INOP BTTRY CHRGR LOST POWER	FAULTY POWER SUPPLY CARD IN CHARGER
W	TR1	032622	090380	BA	FW	B20	N		U		DIESEL-DRIVEN AFWP FAILD TO START FROM MANUAL SIG	FAILED STARTING BATTERY
W	TU3	033530A	121180	BC	NN	C00	N		U		PROBLEMS WITH 48 125 VDC BATTERY CHARGER	NO CAUSE GIVEN
W	TU3	033530B	121180	BA	NN	T34	N	U	T		48 125 VDC BATT OOS,TECH SPEC EXCEEDED	PROBLEM W/ ASSOCIATED BTTRY CHARGER
W	YR1	019476A	101477	BC	NN	B1210	N	R	T		NO. 2 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING
W	YR1	019476B	101477	BC	NN	T01	N	U	D		NO. 1 BATTERY CHARGER CROSS TIED TO NO. 2 BATTERY	OVERSIGHT CAUSE LCO STATED IN TECH SPEC
W	YR1	019640	110577	BC	NN	B1210	N	R	T		NO. 1 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING DUE TO NORMAL WEAR
G	BF2	025671	041979	BA	SP	B3302	N	C	D		BROKEN TERMINAL DISCOVERED ON S/D BOARD "D" BTTRY	PERSONNEL ERROR. ALSO AFFECTED UNIT 1
G	BP1	015248A	063076	BC	ST	B29	N		U		STATION BATTERY CHARGER FAILED	DEFECTIVE SILICON RECTIFIERS
G	BP1	015248B	063076	BA	ST	A18	N		D		LOAD ON BTTRY REDUCED VOLTAGE & SPECIFIC GRAVITY	STATION BATTERY CHARGER HAD FAILED
G	BP1	015444	081276	BA	DB	B33	N		T		EMERGENCY DIESEL GENERATOR DID NOT START DUE TO L-	-OOSE BATTERY CONNECTION.
G	BP1	017704*	033077	BA	UP	B3304	N	C	D	4	NO OUTPUT FROM ALL UPS BATTERY BANKS	CONNECTORS NOT TIGHTENED DURING INSTAL
G	BP1	019025A	082977	BA	FP	B3302	N		D		DIESEL FIRE PUMP "A" BATTERY FOUND WITH NO OUTPUT	CONNECTORS NOT TIGHTENED

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY ACTIVITY RESULTING IN DISCOVERY

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	BP1	0190258	082977	BA	FP	B00	N		U		DIESEL FIRE PUMP "B" BATTERY FOUND FAILED WITH NO-	-OUTPUT. DISCHR WITH NO APPARENT CAUSE
G	CO1	0221018	062778	BC	NN	B2333	N		T		1A 250V BTTRY CHRGR TIE BREAKER TRIPPED	POOR CNNCTR CNTCTS IN CURRENT MODULE
G	CO1	0221018	062778	BC	NN	B3304	N	U	D		1A 250V BTTRY CHRGR INPUT BREAKER TRIPPED	LOOSE CNNCTN AT CHRGR INPUT BRKR PHASE A
G	DA1	171665	120881	BC	NN	E00	N		U		BATTERY CHARGER OUTPUT INCORRECT	UNKNOWN
G	DR1	018553A	072977	BA	FP	B3413	N	C	D	2	DIESEL FIRE PUMP BATTERIES FAILED TO START DIESEL	FAILED FUSE FROM BATTERY CHARGER CIRCUIT
G	DR1	018553B	072977	BC	FP	B22	N		U		FUSE FOUND BLOWN IN DIESEL FIRE PUMP BATTERY CHAR-	-GER.
G	DR3	025951	042479	BA	NN	B01	N	U	D		UNIT 2'S BATTERY NOT RETURNED TO NORMAL LINEUP	BREAKER COULD HAVE BEEN SHUT AT ANY TIME
G	EN2	032981A	032381	BA	AM	B1834	N		D		POST TREATMENT MON 2D11-K615A BATTERY DRAINED	BATTERY CHARGER 2AB 24/48 VDC FAILED
G	EN2	032981B	032381	BC	NN	B00	N		U		24/48 VDC BATTERY CHARGER FOUND NOT CHARGHING	NO CAUSE GIVEN
G	EN2	036943A	040781	BA	ST	A1602	N	C	D	2	ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF ST -	-BTTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943B	040781	BA	ST	A1702	N	C	D	2	ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF ST B-	-TTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943C	040781	BA	DB	A1602	N	C	D		ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF DIE-	-SEL GENERATOR BATTERY. PERSONNEL ERROR
G	EN2	036943D	040781	BA	DB	A1702	N	C	D		ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF DIES-	-EL GENERATOR BATTERY. PERSONNEL ERROR
G	FP1	026922	090479	BA	ST	A20	N		U		LEAKING CELL NOTED IN BATTERY "B". BATTERY TEMPOR-	-ARILY INOP WHILE CELL JUMPERED
G	FP1	033280	111780	BA	ST	A10	N		T		STATION BTTRY B MADE INOP TO JUMP A CELL	CELL #8 POOR PERFORMANCE DUE TO AGE
G	FP1	171811	123081	BA	NN	B18	N		D	2	LOW VOLTAGE FROM DIVISION I 24 VCDC BATTERIES,CAUS	-ED ERRATIC READINGS ON LRM & SRM INST
G	OC1	021497A	052478	BA	DB	T01	N	U	D		D/G BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	021497B	052478	BA	ST	T01	N	U	D		STATION BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	PI1	0279508	122479	BC	SY	B00	N	R	U		SWITCHYARD 125 VDC BACKUP BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	PI1	033899	082180	BC	NN	B2113	N		U		"A" 125 VDC CONTROL BATT CHARGER INOPERABLE	VOLTAGE REGULATOR ELECTRONIC MODULES FAILE
G	QC2	018460	060977	BC	NN	E2101	N	U	D		BATTERY CHARGER SUPPLYING CURRENT TO BATTERY FOUN-	-D LOW. FLOATING POTENTIOMETER SET LOW
G	VY1	016217A	101376	BA	UP	A34	N	R	U		UPS-1B CNTRL PWR BTTRY VOLTAGE WAS LOW	CNTRL BATT CHRGNG POWER SUPPLY FAILED
G	VY1	016217B	101376	BC	UP	B21	N	R	U		CNTRL BTTRY CHARGING POWER SUPPLY FAILED	INOPERATIVE VOLTAGE REGULATOR CIRCUIT
G	VY1	018407A	031877	BA	UP	A3413	N	R	D		UPS-1B ALARMED DUE TO LOW VOLTAGE,CAUSED SCRAM	CAPACITOR FAILED IN CHARGING POWER SUPPLY
G	VY1	018407B	031877	BC	UP	B13	N		T		UPS-1B CONTROL CHARGING POWER SUPPLY FAILED	FAILED CAPACITOR IN ON/OFF CIRCUITRY
G	VY1	021749	061978	BC	NN	B06	N	S	D		AC INPUT BRKR TO CA1 BATT CHRGR TRPD OPEN	SPURIOUS TRP OF AC BRKR IN AN ELEC STORM
G	VY1	025519	031779	BC	UP	B00	N		U		CONTROL CHARGING POWER SUPPLY FAILED	NO CAUSE GIVEN. CAUSED BATTERIES DISCHR
B	CR3	017166A	011277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166B	020277	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166C	020977	BA	NN	T03	R	U	D		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	021165	040578	BA	NN	T02	R	V	D		WRONG BTTRY CELLS MONITORED FOR WEEKLY BATT SURV	PERSONNEL NOT FOLLOWING PROCEDURES
B	DB1	022362	090578	BA	ST	T02	R	U	D		STATION BATTERIES WKLY SURV TEST NOT DONE ON TIME	MISUNDERSTANDING BTWN PERSONNEL

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY ACTIVITY RESULTING IN DISCOVERY

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
B	OE3	015532	081876	BA	NN	T05	R	U	D		125-VDC INSTR & CNTRL BATTERIES NOT LOAD TESTED	DFCTV PROC: WRONG DATA IN SURV PRINTOUT
C	AR2	026489	052279	BA	ST	T03	R	U	D		SURVEILLANCE NOT PERFORMED ON STATION BATTERIES	PERSONNEL OVERSIGHT
C	SL1	037962	062481	BC	NN	T02	R	U	D		SURVEILLANCE REQUIREMENTS NOT MET ON "AB" BATTERY-	-CHARGER. MISINTERPRETATION O TECH SPEC
W	BV1	017119A	020477	BA	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON #3 & #4 STATIO-	-N BATTERIES. PERSONNEL ERROR
W	BV1	017119B	020477	BC	ST	T03	R	U	D		SURVEILLANCE TEST NOT PERFORMED ON CHARGERS ASSOC-	-IATED WITH #3 & #4 STATION BTTRY. PERSON
W	DC2	039127	101981	BA	NN	T05	R	U	D		SURVEILLANCE NOT PERFORMED ON "N" TRAIN BATTERY	PROCEDURE LACKED SIGNOFF
W	JF1	027181	090679	BA	NN	T03	R	U	D		QUARTERLY AUXILIARY BUILDING BATTERY VERIFICATION-	-NOT PERFORMED ON TIME. PERSONNEL
W	NA1	026565	062879	BA	DB	T05	R	U	D		7 DAY SURVEILLANCE OF EMERGENCY DIESEL GENERATOR -	-BATTERIES EXCEEDED INTERVAL. PROCEDURAL
W	NA1	026656	073179	BA	DB	T05	R	U	D		DIESEL GENERATOR BATTERIES SURVEILLANCE NOT DONE	TIME LAG IN IMPLEMENTING NEW PROCEDURES
W	NA1	036491A	022881	BA	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	NA1	0364918	022881	BC	ST	T02	R	U	D		18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-B SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	NA2	036417	022081	BA	DB	T05	R	U	D		DATA FROM TWO TESTS ON 2J DIESEL BATTERY FOUND NO-	-T USABLE. NOT COMPARED WITH INITIAL CON
W	PR1	026268	053179	BA	FP	T05	R	U	D		DIESEL DRIVEN WEEKLY BATTERY INSPECTION NOT DONE	PROCEDURES WERE DEFECTIVE
W	PR1	030917	033180	BA	ST	T02	R	U	D		INDIVIDUAL FLOAT CELL VOLT MEAS NOT DONE IN STATI-	-ON BATTERY TEST. PERSONNEL OVERSIGHT
W	SA1	032162	072180	BA	FP	T02	R	U	D		92 DAY & 18 MON SURV NOT DONE ON 24 V STARTG BATT	ELECTRICIAN NOT COMPLETING JOB
W	TR1	014563	032476	BA	ES	T05	R	U	D		ESF DC PWR SUPPLIES SURV REQ PERFORMD AT WRNG FREQ	PROCEDURE DID NOT USE FREQ REQ BY T.S.
W	TR1	020885	031778	BA	NN	T02	R	U	D		125 VDC ELECTRICAL SYS OP NOT VERIFIED WK OF 2-26	MAINT PERS FAILD TO INSURE SURV COMPLETED
W	TR1	025211A	011979	BA	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TR1	0252118	011979	BC	NN	T03	R	U	D		125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
G	BP1	033637	122380	BA	NN	T02	R	U	D		DC BATTERY MONTHLY TESTS OVERDUE	INADQ ADMIN CONTROLS & PERSONNEL ERROR
G	BR2	014651	021276	BA	NN	T05	R	U	D		MONTHLY INSTEAD OF QUARTERLY BATTERY P.T. PERFORMD	WRONG P.T. SCHEDULED BY MISTAKE
G	CO1	037938	052881	BA	ST	T03	R	U	D		SG TESTS FOR 125V 1A&B AND 250V 1B NOT PERFORMED -	-PROPERLY. PERSONNEL USED WRONG HYDROM
G	DA1	030982	041780	BA	NN	T02	R	U	D		WKLY BATT SURV DOCUMENTATION NOT COMPLETED	PERSONNEL ERROR-NONLIC. OPERATIONS PERS
G	DR2	039116	102181	BA	NN	T01	R	U	D		QUARTERLY STORAGE BATTERY SURVEILLANCE DONE 3 DAY-	-S LATE. OVERSIGHT BY OPERATING SHIFT
G	DR3	036569	030381	BA	NN	T01	R	U	D		WEEKLY STORAGE BATTERY SURVEILLANCE DONE 4 DAYS L-	-ATE. OVERSIGHT BY OPERATING SHIFT
G	EN1	021719	062778	BA	DB	T02	R	U	D		WKLY PILOT CELL SURV OF 1C D/G BTTRY NOT COMPLET--	ED ON TIME. PERSONNEL OVERSIGHT
G	EN1	027782	112679	BA	NN	T03	R	U	D		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	EN2	022208	081678	BA	NN	T02	R	U	D		WKLY PILOT CELL SURV OF PLANT BATT NOT COMPLETED--	ON TIME. NOTICES ROUTED TO ABSENT PERS
G	EN2	026657	071879	BA	NN	T03	R	V	D		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	MI1	014478	040776	BA	SY	T01	R	U	D		SWITCHYARD BTTRY SURVEILLANCE NOT PERFORMED W/IN--	REQ TIME PERIOD. PERSONNEL ERROR
G	OC1	023298A	121378	BA	DB	T01	R	U	D		D/G BTTRY NOT TESTED/MONITORED W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	0232988	121378	BA	ST	T01	R	U	D		STATION BTTRY NOT TEST/MONITOR W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS SORTED BY ACTIVITY RESULTING IN DISCOVERY

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCOUDEE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	OC1	030599A	022880	BA	ST	T02	R	U	D		MAIN STATION BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	OC1	030599B	022880	BA	DB	T02	R	U	D		DIESEL GENERATOR BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	OC1	038737	091181	BA	NN	T02	R	U	D		BATTERY SURVEILLANCE PROCEDURES FOUND NOT TO FULL-	-Y COMPLY WITH NEW REQUIREMENTS.
C	PA1	036C00*	010681	BA	ST	B02	U	U	D	2	OUTPUT BREAKER FOR BOTH STATION BATTERIES WERE OP-	-ENED FOR 1 HOUR. PERSONNEL ERROR
W	SE1	032342A	081280	BA	DB	B05	U		D		D/G BTTRY 18-8 CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	SE1	0323428	081380	BA	DB	B05	U		D		D/G BTTRY 18-8 CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	SU2	038470	090681	BA	FP	B00	U		U		SOMKE DETECTOR BATERY FOUND NOT TO TAKE A CHARGE	NO CAUSE GIVEN
W	TU3	022061A	122277	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	TU3	022061B	122977	BA	ST	T01	U	U	D		EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	ZI1	172130	121581	BA	NN	C05	U	U	D		EQUALIZING CHARGE NOT PLACED ON BATTERY 112	PROCEDURE NOT CLEAR ON COMMUNICATIONS
G	BF1	038085	072281	BA	NN	A20	U		U		250 VOLT MAIN BATTERY TAKEN OOS TO BYPASS A CRACK-	-ED CELL.
G	BP1	018462A	061677	BA	SA	A17	U	R	U		WATER ADDED TO CELL 27 OF RDS BATTERY "B"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	019472A	092977	BA	SA	A17	U	R	U		WATER ADDED TO CELL 12 OF RDS BATTERY "A"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	019542A	100877	BA	SA	A17	U	R	U		WATER ADDED TO 3 CELLS OF RDS BATTERY "D"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	FP1	019457	102077	BA	ST	A20	U		U		STATION BATTERY "B" FOUND TO HAVE CRACKED CELL	NO CAUSE KNOWN FOR CRACKED CELL #228
G	OC1	018293A	062877	BA	SY	B34	U	C	D		ONE OF TWO SWITCHING STATION BATTERIES FOUND OOS -	-FOR 11 DAYS. BATTERY CHARGER FAILED
G	OC1	018293B	062877	BC	SY	B2713	U		U		BATTERY CHARGER FOR SWITCHING STATION BATTERY FOU-	-ND OOS AFTER 11 DAYS
G	PI1	027950A	122379	BC	SY	B00	U	R	U		SWITCHYARD 125 VDC BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	QC1	019222	092477	BA	NN	M2010	U		T		BATTERY SYSTEM TAKEN OUT OF SERVICE	REPLACED 12 WEAK CELLS,NORMAL END OF LIFE
G	QC2	018164	031777	BC	NN	C23	U		U		UNITS BATTERY CHARGER APPARENTLY INOPERABLE	FAULTY INDUCTIVE CURRENT CONTROL CIRCUIT

APPENDIX J

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS FOUND IN NUREG-0666

CODES USED IN LER ONE-LINE DESCRIPTIONS

NSSS VENDOR

CODE	DESCRIPTION
B	BABCOCK & WILCOX
C	COMBUSTION ENGINEERING
W	WESTINGHOUSE
G	GENERAL ELECTRIC

EVENT CLASSIFICATION

CODE	DESCRIPTION
D	FREQUENCY
T	AGE
U	UNKNOWN

COMPONENT

CODE	DESCRIPTION
BA	BATTERY
BC	BATTERY CHARGER

FAILURE CAUSE

CODE	DESCRIPTION
00	UNKNOWN
01	PERSONNEL OPERATION
02	PERSONNEL MAINTENANCE
03	PERSONNEL TESTING
04	DESIGN/FABRICATION/CONSTRUCTION/QUALITY CONTROL
05	DEFECTIVE PROCEDURES
06	EXTREME ENVIRONMENT
08	CORROSION
10	NORMAL WEAR/NATURAL END OF LIFE
11	ELECTRICAL MALFUNCTION
12	MECHANICAL MALFUNCTION
13	PIECE PART FAILURE
14	LOW SPECIFIC GRAVITY
15	STRATIFICATION
16	HIGH ELECTROLYTE SOLUTION LEVEL
17	LOW ELECTROLYTE SOLUTION LEVEL
18	INSUFFICIENT CHARGE
20	DEFECTIVE/WEAK CELLS
21	VOLTAGE REGULATOR MALFUNCTION
22	CURRENT LIMITER MALFUNCTION
23	CURRENT CONTROLLER MALFUNCTION
24	VOLTAGE LIMITER MALFUNCTION
25	THERMAL OVERLOAD PROTECTION
26	COOLING FAN/VENTILATION MALFUNCTION
27	CHARGE CONTROL MALFUNCTION
28	CHARGE CONTROL TIMER MALFUNCTION
29	RECTIFIER PROBLEM
30	SHORT CIRCUIT
32	ELECTROLYTE DILUTION
33	FAULTY CABLE/CONNECTORS
34	CHARGER MALFUNCTION

FAILURE MODE

CODE	DESCRIPTION
A	REDUCED CAPABILITY
B	NO OUTPUT
C	UNKNOWN/UNSPECIFIED/OTHER
D	HIGH CURRENT/VOLTAGE OUTPUT
E	LOW OUTPUT VOLTAGE
G	HIGH AC RIPPLE ON DC OUTPUT
M	MAINTENANCE REPLACEMENT
T	TEST NOT PERFORMED

TYPE EVENT

CODE	DESCRIPTION
B	RECURRING COMMON CAUSE
C	COMMON CAUSE
R	RECURRING
S	COMMAND FAULT
T	RECURRING COMMAND FAULT
U	COMMON CAUSE COMMAND FAULT
V	RECURRING COMMON CAUSE COMMAND FAULT
BLANK	RANDOM

ACTIVITY RESULTING IN DISCOVERY

CODE	DESCRIPTION
A	TESTING(UNSPECIFIED)
B	NORMAL LOAD TESTING
C	MONTHLY TESTING
D	WEEKLY TESTING
E	QUARTERLY TESTING
F	REFUELING TESTING
G	18 MONTH TESTING
H	5 YEAR TESTING
M	MAINTENANCE
N	NORMAL PLANT OPERATION
R	RECORDS REVIEW
U	UNKNOWN

FLAGGING FIELD

CODE	DESCRIPTION
A	FAILED COMPONENT CAUSED AN ACCIDENT
B	COMPONENT FAILED TO MITIGATE AN ACCIDENT
C	SAFETY SIGNIFICANT
D	FAIL # NOT KNOWN
E	CELL # NOT KNOWN
F	FAIL # AND CELL # NOT KNOWN
N	FROM NSIC DATA BASE

SYSTEM IDENTIFICATION CODES

CODE	DESCRIPTION
AM	AREA MONITOR SYSTEM
DB	EMERGENCY DIESEL GENERATOR
ES	ENGINEERED SAFETY FEATURE
FP	FIRE PROTECTION SYSTEM
FW	FEEDWATER SYSTEM
NM	NEUTRON MONITORING BATTERY
NN	UNKNOWN/UNSPECIFIED/OTHER
SA	AUTOMATIC (REACTOR) DEPRESSURIZATION (ADS)
SP	SPECIAL USE BATTERIES
ST	STATION BATTERIES/CHARGERS
SW	SERVICE WATER BUILDING BATTERIES/CHARGERS
SY	SWITCHYARD BATTERIES/CHARGERS
UP	UNINTERRUPTIBLE POWER SYSTEM (UPS)

ONE-LINE DESCRIPTIONS OF BATTERY AND BATTERY CHARGER EVENTS FOUND IN NUREG-0666

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	SYSTEM	FAILCODE	ACTIVITY	TYPE	CLASS	FAIL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
A	OE3	022183	072778	BA	NN	B33	B		U		SMOKE FROM 1 TERMINAL OF IEC BATTERY 3C8	TERMINAL DFCTV/CNNCTNS FOUND DEFECTIVE
C	PA1	016178	102076	BC	NN	E2201	N		D		DC BUS-2 VOLTG FELL;VOLTG ON ASSOC AC BUSES FELL	CURR LMTR & OUTPUT BRKR SETTING ERRONEOUS
W	BV1	021043	032078	BC	NN	E2713	N		U		DECR #4 DC BUS VOLTAGE DUE TO A FAULTY BTTRY CHRGR	FAILD COLLECTR RESISTR IN CHRGR CNTRL CKT
W	HN1	014608A	042576	BC	NN	D2833	N		U		BTTRY CHARGER A WENT INTO OVERCHARGE	FAULTY CNTCT ON CHARGER CONTROL TIMER
W	IP3	014709	051076	BC	NN	B2630	A		U		BTTRY CHRGR TROUBLE ALARMED CHARGER FAN HAD TRPD	AC FAN MTR INOP EXPOSED WIRE BLEW A FUSE
W	IP3	015138	060876	BC	NN	B13	A	S	U		# 31 BTTRY CHRGR AC BRKR TRIPD BATT CHRGR INOP	PRESSURE SENSOR FAILED TRIPPING BREAKER
W	PR2	014599	041476	BC	NN	B2133	B		U		#12 BATTERY CHARGER FAILED DISABLED "B" DC POWER	VOLTAGE CNTRL CRD LOOSE IN ITS SOCKET
W	YK1	019476A	101477	BC	NN	B1210	N	R	T		NO. 2 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING
G	BF2	015394	070976	BA	NN	B3302	M	U	D		NEUTRON MONITORING BATTERY 2A MADE INOPERABLE	CNNCTR BROKEN OFF A CELL POST PERS ERFOR
G	BP1	015248A	063076	BC	ST	B29	N		U		STATION BATTERY CHARGER FAILED	DEFECTIVE SILICON RECTIFIERS
G	BP1	015444	081276	BA	DB	B33	N		T		EMERGENCY DIESEL GENERATOR DID NOT START DUE TO L-	-OOSE BATTERY CONNECTION.
G	BP1	017704*	033077	BA	UP	B3304	N	C	D	4	NO OUTPUT FROM ALL UPS BATTERY BANKS	CONNECTORS NOT TIGHTENED DURING INSTAL
G	BP1	019025A	082977	BA	FP	B3302	N		D		DIESEL FIRE PUMP "A" BATTERY FOUND WITH NO OUTPUT	CONNECTORS NOT TIGHTENED
G	BR1	019389	102177	BC	NN	B2206	B		U		BATT CHRGR DC OUTPT FUSE FAILD WHEN CHRG BATT 2B-2	HI CURR/TEMP CAUSD SOLDERD LINKG SEPARATE
G	CO1	022101A	062778	BC	NN	B2333	N		T		1A 250V BTTRY CHRGR TIE BREAKER TRIPPED	POOR CNNCTR CNTCTS IN CURRENT MODULE
G	DR1	018553B	072977	BC	FP	B22	N		U		FUSE FOUND BLOWN IN DIESEL FIRE PUMP BATTERY CHAR-	-GER.
G	DR3	016265A	101876	BA	NN	A34	A		D		BATTERY IN A DEGRADED CONDITION	CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"
G	DR3	016265B	101876	BC	NN	C00	A		U		CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"	UNKNOWN CAUSE
G	DC1	018293B	062877	BC	SY	B2713	U		U		BATTERY CHARGER FOR SWITCHING STATION BATTERY FOU-	-ND OOS AFTER 11 DAYS
G	DC1	019222	092477	BA	NN	M2010	U		T		BATTERY SYSTEM TAKEN OUT OF SERVICE	REPLACED 12 WEAK CELLS,NORMAL END OF LIFE
G	DC2	018164	031777	BC	NN	C23	U		U		UNITS BATTERY CHARGER APPARENTLY INOPERABLE	FAULTY INDUCTIVE CURRENT CONTROL CIRCUIT
G	VY1	016217A	101376	BA	UP	A34	N	R	U		UPS-1B CNTRL PWR BTTRY VOLTAGE WAS LOW	CNTRL BATT CHRGNG POWER SUPPLY FAILED
G	VY1	016217B	101376	BC	UP	B21	N	R	U		CNTRL BTTRY CHARGING POWER SUPPLY FAILED	INOPERATIVE VOLTAGE REGULATOR CIRCUIT

APPENDIX K

ADDITIONAL INFORMATION CONTAINED IN BATTERY AND BATTERY CHARGER ONE-LINE DESCRIPTIONS

CODES USED IN LER ONE-LINE DESCRIPTIONS

NSSS VENDOR

CODE	DESCRIPTION
B	BABCOCK & WILCOX
C	COMBUSTION ENGINEERING
W	WESTINGHOUSE
G	GENERAL ELECTRIC

EVENT CLASSIFICATION

CODE	DESCRIPTION
D	FREQUENCY
T	AGE
U	UNKNOWN

COMPONENT

CODE	DESCRIPTION
BA	BATTERY
BC	BATTERY CHARGER

FAILURE CAUSE

CODE	DESCRIPTION
00	UNKNOWN
01	PERSONNEL OPERATION
02	PERSONNEL MAINTENANCE
03	PERSONNEL TESTING
04	DESIGN/FABRICATION/CONSTRUCTION/QUALITY CONTROL
05	DEFECTIVE PROCEDURES
06	EXTREME ENVIRONMENT
08	CORROSION
10	NORMAL WEAR/NATURAL END OF LIFE
11	ELECTRICAL MALFUNCTION
12	MECHANICAL MALFUNCTION
13	PIECE PART FAILURE
14	LOW SPECIFIC GRAVITY
15	STRATIFICATION
16	HIGH ELECTROLYTE SOLUTION LEVEL
17	LOW ELECTROLYTE SOLUTION LEVEL
18	INSUFFICIENT CHARGE
20	DEFECTIVE/WEAK CELLS
21	VOLTAGE REGULATOR MALFUNCTION
22	CURRENT LIMITER MALFUNCTION
23	CURRENT CONTROLLER MALFUNCTION
24	VOLTAGE LIMITER MALFUNCTION
25	THERMAL OVERLOAD PROTECTION
26	COOLING FAN/VENTILATION MALFUNCTION
27	CHARGE CONTROL MALFUNCTION
28	CHARGE CONTROL TIMER MALFUNCTION
29	RECTIFIER PROBLEM
30	SHORT CIRCUIT
32	ELECTROLYTE DILUTION
33	FAULTY CABLE/CONNECTORS
34	CHARGER MALFUNCTION

FAILURE MODE

CODE	DESCRIPTION
A	REDUCED CAPABILITY
B	NO OUTPUT
C	UNKNOWN/UNSPECIFIED/OTHER
D	HIGH CURRENT/VOLTAGE OUTPUT
E	LOW OUTPUT VOLTAGE
G	HIGH AC RIPPLE ON DC OUTPUT
M	MAINTENANCE REPLACEMENT
T	TEST NOT PERFORMED

TYPE EVENT

CODE	DESCRIPTION
B	RECURRING COMMON CAUSE
C	COMMON CAUSE
R	RECURRING
S	COMMAND FAULT
T	RECURRING COMMAND FAULT
U	COMMON CAUSE COMMAND FAULT
V	RECURRING COMMON CAUSE COMMAND FAULT
BLANK	RANDOM

ACTIVITY RESULTING IN DISCOVERY

CODE	DESCRIPTION
A	TESTING(UNSPECIFIED)
B	NORMAL LOAD TESTING
C	MONTHLY TESTING
D	WEEKLY TESTING
E	QUARTERLY TESTING
F	REFUELING TESTING
G	18 MONTH TESTING
H	5 YEAR TESTING
M	MAINTENANCE
N	NORMAL PLANT OPERATION
R	RECORDS REVIEW
U	UNKNOWN

FLAGGING FIELD

CODE	DESCRIPTION
A	FAILED COMPONENT CAUSED AN ACCIDENT
B	COMPONENT FAILED TO MITIGATE AN ACCIDENT
C	SAFETY SIGNIFICANT
D	FAIL # NOT KNOWN
E	CELL # NOT KNOWN
F	FAIL # AND CELL # NOT KNOWN
N	FROM NSIC DATA BASE

SYSTEM IDENTIFICATION CODES

CODE	DESCRIPTION
AM	AREA MONITOR SYSTEM
DB	EMERGENCY DIESEL GENERATOR
ES	ENGINEERED SAFETY FEATURE
FP	FIRE PROTECTION SYSTEM
FW	FEEDWATER SYSTEM
NM	NEUTRON MONITORING BATTERY
NN	UNKNOWN/UNSPECIFIED/OTHER
SA	AUTOMATIC (REACTOR) DEPRESSURIZATION (ADS)
SP	SPECIAL USE BATTERIES
ST	STATION BATTERIES/CHARGERS
SW	SERVICE WATER BUILDING BATTERIES/CHARGERS
SY	SWITCHYARD BATTERIES/CHARGERS
UP	UNINTERRUPTIBLE POWER SYSTEM (UPS)

ADDITIONAL INFORMATION CONTAINED IN BATTERY AND BATTERY CHARGER ONE-LINE DESCRIPTIONS

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	MANUFACTURERS CODE	VOLTAGE RATING	REPAIR TIME	FLAGGING	CELL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
B	CR3	017166A	011277	BA				F		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166B	020277	BA				F		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	017166C	020977	BA				F		INCORRECT PILOT CELLS TESTED FOR 3A/B BATTERIES	IDENTIFICATION STICKERS NOT MOVED
B	CR3	021165	040578	BA	E355			E		WRONG BTTRY CELLS MONITORED FOR WEEKLY BATT SURV	PERSONNEL NOT FOLLOWING PROCEDURES
B	CR3	C38100	071481	BA	C173	125		A	NA	STATION BATTERY SHORTED DURING MAINTENANCE	PERSONNEL ERROR. CAUSED REACTOR TRIP
B	D81	023443	011978	BA	G185	125				IN BTTRY CELL 52 ELECTROLYTE S.G. DECRS .003 OOT	ELEC. STRAT. DUE TO LO BTTRY LOADING
B	D81	021587	042778	BA	C742	024			4	4 CELLS OF ENGINE BTTRY W/ ELECTROLYTE BELOW PLATE	ELEC. ADDED BROUGHT CELLS UP TO NORMAL
B	D81	C22362	090578	BA				D	NA	STATION BATTERIES WKLY SURV TEST NOT DONE ON TIME	MISUNDERSTANDING BTWN PERSONNEL
B	D81	025397	020879	BA	C742				4	ELECTROL LEVEL IN 4 CELLS FOUND LO IN DSL ENG STA-	-RTING BTTRY. DIESEL STILL STARTED
B	DE3	015532	081876	BA		125		D	NA	125-VDC INSTR & CNTRL BATTERIES NOT LOAD TESTED	DFCTV PROC: WRONG DATA IN SURV PRINTOUT
B	DE3	022183	072778	BA	E355	125				SMOKE FROM 1 TERMINAL OF I&C BATTERY 3CB	TERMINAL DFCTV/CNNCTNS FOUND DEFECTIVE
B	TI2	023084*	111278	BC	E355				NA	CHRGRS 2-2A/B FUSE BLEW NO CHRGR FOR BANK 2-2B	DEFECTIVE GATING FILTER MODULES
C	AR2	026489	052279	BA				D	NA	SURVEILLANCE NOT PERFORMED ON STATION BATTERIES	PERSONNEL OVERSIGHT
C	AR2	026704	080479	BC	P319				NA	BATTERY CHARGER 2D31 FAILED. DC OUTPUT LAMP SOCK-	-ET BURNED UP DUE TO HIGH HEAT, VOLT, DUST
C	AR2	027803	121179	BC	P319			1	NA	BATTERY CHARGER 2D32 AC BREAKER TRIPPED	CURRENT SURGED WHEN SHIFTING TO FLOAT
C	AR2	039245*	110581	BC		125			NA	OUTPUT BREAKER OF BATTERY CHARGER 2D34 TRIPPED OP-	-EN TWICE. NO CAUSE COULD BE FOUND
C	CC1	C21533	050378	BA	E355	125				125 VDC BTTRY 22 CELL 54 ICV BELOW MIN VOLTAGE	CAUSE UNKNOWN
C	CC1	037262	050681	BA	E355	125				VOLT OF CELL 18 OF 125 VDC BATTERY 12 FOUND .08V -	-BELOW MINIMUM. FULL CAPACITY AVAILABLE
C	CC2	017344	021777	BA	E355	125		2	NA	#11 125 VDC BATTERY INADVERTENTLY TAKEN OUT OF SE-	-RVICE. SUPERVISOR GAVE PERMISSION
C	MI2	026979	080379	BA	C173			2		4 VARIOUS CELLS REPLACED IN 2D1B BTTRY (4 CELLS)	REDUCTION IN CELL VOLT. FULL CAPACITY
C	PA1	C16178	102076	BC	W120	125			NA	DC BUS-2 VOLTG FELL;VOLTG ON ASSOC AC BUSES FELL	CURR LMTR & OUTPUT BRKR SETTING ERRONEOUS
C	PA1	025917	040479	BA	G185				C	2 2 CELLS IN STATION BATTERY #2 BURST WHILE TAKING -	-VOLTAGE READINGS. FULL CAPACITY AVAL
C	PA1	036300*	010681	BA	W120				NA	OUTPUT BREAKER FOR BOTH STATION BATTERIES WERE OP-	-ENED FOR 1 HOUR. PERSONNEL ERROR
C	SL1	020067	121677	BC	C173				NA	OUTPUT LOST FROM "AB" BATTERY CHARGER	POWER SUPPLY BKR TRIPPED FOR NO REASON
C	SL1	037962	062481	BC					NA	SURVEILLANCE REQUIREMENTS NOT MET ON "AB" BATTERY-	-CHARGER. MISINTERPRETATION OF TECH SPEC
C	SL1	038775	091881	BC	C173				NA	1A BATTERY CHARGER SHUTDOWN ON HIGH VOLTAGE	HIGH VOLTAGE DEVICE FOUND DEFECTIVE
W	3V1	016357	102476	BA	G145					VOLTAGE DECREASED IN CELL 48 BY MORE THAN 0.05V	UNKNOWN. CELL 48 FROM BTTRY 3A 1050 A.H.
W	3V1	017117A	020477	BA	G185				NA	SURVEILLANCE TEST NOT PERFORMED ON #3 & #4 STATIO-	-N BATTERIES. PERSONNEL ERROR
W	3V1	017119B	020477	BC	G185				NA	SURVEILLANCE TEST NOT PERFORMED ON CHARGERS ASSOC-	-IATED WITH #3 & #4 STATION BTTRY. PERSON
W	3V1	021343	032079	BC	L015	125		3	NA	DECR #4 DC BUS VOLTAGE DUE TO A FAULTY BTTRY CHRGR	FAILD COLLECTR RESISTR IN CHRGR CNTRL CKT

ADDITIONAL INFORMATION CONTAINED IN BATTERY AND BATTERY CHARGER ONE-LINE DESCRIPTIONS

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	MANUFACTURERS	VOLTAGE	REPAIR	FLAGGING	CELL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	BV1	022136	080478	BC	W120				NA	#4 STATION BTTRY CHRGR OUTPUT BRKR TRIPPED	IMPROPR OP OF CKTBRK.CAUSE OF TRP UNKNOWN
W	BV1	028147	092179	BA	G195					CELL #6 OF BATTERY NO. 1 COULD NOT HOLD ORIGINAL -	-VOLTAGE. FULL BATTERY CAPACITY AVAIL.
W	BV1	037757	061581	BC		125			NA	#2 BATTERY CHARGER OUTPUT BREAKER FAILED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAD
W	BV1	038347	080581	BC		125			NA	#2 BATTERY CHARGER OUTPUT BREAKER TRIPPED OPEN	EXCESSIVE HEAT CAUSED THERMAL OVERLOAD
W	BV1	038825	091081	BC				2	NA	#4 STATION BATTERY CHARGER TAKEN OUT OF SERVICE	BAD ELECTRICAL CONNECTION IN OUTPUT
W	BV1	039154	101781	BA	G195				2	2 OF 60 CELLS VOLTAGE FOUND DROPPED BY .05 VDC	NO CAUSE GIVEN.BATTRY HAD FULL CAPACITY
W	DC1	025643	032379	BC		125		A	NA	125 VDC EQUALIZING CHARGE TOO HIGH. FAILED INVERT-	-ER, CAUSED SCRAM AND SI. NO CAUSE
W	DC2	021633	060778	BA	E355			1		CD PLANT BTTRY CELL 89 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	DC2	021632	051578	BA	E355			1		AB PLANT BTTRY CELL 35 BELOW MIN SPECIFIC GRAVITY	EXACT CAUSE NOT DETERMINED
W	DC2	039127	111981	BA						SURVEILLANCE NOT PERFORMED ON "N" TRAIN BATTERY	PROCEDURE LACKED SIGNOFF
W	HN1	014603A	042576	BC	W120				NA	BTTRY CHARGER A WENT INTO OVERCHARGE	FAULTY CNTCT ON CHARGER CONTROL TIMER
W	HN1	014609B	042576	BC	W120				NA	VOLTG REG SPIKING TO 200 AMPS THEN SHUTTING OFF	FAULTY PHASING CRD IN CURRENT LIMITER CKT
W	IP3	014709	051076	BC	W120				NA	BTTRY CHRGR TROUBLE ALARMED CHARGER FAN HAD TRPD	AC FAN MTR INOP EXPOSED WIRE BLEW A FUSE
W	IP3	015139	060876	BC					NA	# 31 BTTRY CHRGR AC BRKR TRIPD BATT CHRGR INOP	PRESSURE SENSOR FAILED TRIPPING BREAKER
W	IP3	036207	012481	BC	W120			1	NA	OUTPUT FROM CHARGER #32 DISCOVERED DROPPING	VOLTAGE AND CURRENT CONTROLLER REPLACED
W	IP3	038257	070681	BC	F013				NA	BATTERY CHARGER #32 DISCOVERED TRIPPED	FAILED OP AIR FLOW SENSOR SWITCH
W	JF1	021235A	041878	BA	C173	125			2	2 CELLS IN SW BLDG "A" BATT BANK 1 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	JF1	021235B	041878	BA	C173	125		1	2	2 CELLS IN SW BLDG B BATT BANK 2 FAILD T.S. REQ	CAUSE COULD NOT BE DETERMINED
W	JF1	027181	090579	BA				D	NA	QUARTERLY AUXILIARY BUILDING BATTERY VERIFICATION-	-NOT PERFORMED ON TIME. PERSONNEL
W	JF1	032332A	061280	BA	E355			2	3	SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	BATT PLACED ON EQUALIZE & S.G. ACCEPTABLE
W	JF1	032332B	082580	BA	E355			2	3	SW BLDG B BTTRY SYS LOW SPECIFIC GRAVITY	NO EXTERNAL CAUSE FOR LOW SPECIFIC GRAV
W	JF1	032504	082580	BC	G080			1	NA	SW B DC DISTRIBUTION SYS INOP NO OUTPUT FROM BATT-	-CHRGR 4. HV S/D RELAY ACTUATED
W	JF1	032587	091180	BA	E355			1	NA	SW BLDG "A" BATT SYS LO BATT CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033007	102180	BA	E359			2	NA	SW "A" BTTRY SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM POST PROX/ACID RESIDUE/DESIGN
W	JF1	033163	102880	BA	E355			1	NA	SW BLDG "A" BATT SYS LOW CELL SPECIFIC GRAVITY	CLOSE TERM PROX/ACID RES/PUST SEAL DESIGN
W	JG1	039136	101981	BA	G185	125			3	CELL TO CELL RESISTANCE IN 3 CELLS FOUND HIGH	CORROSION OF TERMINAL CONNECTIONS
W	NA1	026565	062879	BA	C173			D	NA	7 DAY SURVEILLANCE OF EMERGENCY DIESEL GENERATOR -	-BATTERIES EXCEEDED INTERVAL. PROCEDURAL
W	NA1	026656	073179	BA	E355			D	NA	DIESEL GENERATOR BATTERIES SURVEILLANCE NOT DONE	TIME LAG IN IMPLEMENTING NEW PROCEDURES
W	NA1	036491A	022881	BA	C173			D	NA	18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT
W	NA1	036491B	022881	BC	C173			D	NA	18 MONTH SURVEILLANCE ON D.C. DISTRIBUTION SERVIC-	-E SYSTEM NOT DONE. PERSONNEL OVERSIGHT

ADDITIONAL INFORMATION CONTAINED IN BATTERY AND BATTERY CHARGER ONE-LINE DESCRIPTIONS

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	MANUFACTURERS CODES	VOLTAGE ALIGNED	REPAIR TIME	FLAGGING	CELL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	NA1	171672	120181	BA				N		1J EMERGENCY D/G INOP CELL S.G. BELOW 1.2	D/G BATTERY NEAR END OF USEFUL LIFE
W	NA2	036466*	021881	BA	E355			C	4	BATTERIES FOR 2J & 2H DIESEL GENERATORS FAILED SU-	-RVEILLANCE TEST. 4 CELLS REPLACED
W	NA2	036417	022081	BA	E355				NA	DATA FROM TWO TESTS ON 2J DIESEL BATTERY FOUND NO-	-T USABLE. NOT COMPARED WITH INITIAL CON
W	PR1	026268	053179	BA				D	NA	DIESEL DRIVEN WEEKLY BATTERY INSPECTION NOT DONE	PROCEDURES WERE DEFECTIVE
W	PR1	030917	033180	BA				D	NA	INDIVIDUAL FLOAT CELL VOLT MEAS NOT DONE IN STATI-	-ON BATTERY TEST. PERSONNEL OVERSIGHT
W	PR1	033222	110580	BC	E355				NA	#12 BTTRY CHRGR FAILD TO PROVIDE NORMAL OUTPUT	FIRING CARD B NOT PROVIDING PULSE TO SCR
W	PR2	014599	041476	BC	E355				NA	#12 BATTERY CHARGER FAILED DISABLED "B" DC POWER	VOLTAGE CNTRL CRD LOOSE IN ITS SOCKET
W	RO2	015515	071076	BA	G185				NA	BATTERY B LEADS WERE REMOVED RENDERING BATT INOP	PERS FAILED TO COMPLY W/ T.S. 3.7
W	RO2	021895	071678	BA				C	2	PLASTIC TOP OF 2 STATN "A" BATT CELLS ON FIRE	RESISTNC HEATG OF STRAP-CELL TERMINAL
W	SA1	020738A	020178	BA	E355	125			NA	1C 125V BATTERY VOLTAGE LOW	1C1,1C2 BATT CHARGER D.C. BRKRS TRPD
W	SA1	020738B	020178	BC	E355	125	1		NA	1C1,1C2 BATT CHARGER D.C. BRKRS TRIPPED	UNKNOWN CAUSE
W	SA1	032162	072180	BA		024			NA	92 DAY & 18 MON SURV NOT DONE ON 24 V STARTG BATT	ELECTRICIAN NOT COMPLETING JOB
W	SA1	038834	091881	BA	W059		4		NA	BATTERY CABLE CLAMP FOUND ARCING AND CRACKED	CLAMP WAS REPLACED ON #2 FIRE PUMP BTTRY
W	SA2	038319	072481	BC	E355		24		NA	2C1 BATTERY CHARGER DISCOVERED TRIPPED. VOLTAGE -	-SETTING WAS INCORRECTLY SET
W	SA2	038327	081281	BC	E355	028			NA	2B1 BATTERY CHARGER WOULD NOT PICK UP 28 VDC LOAD	HIGH VOLTAGE CUT-OUT ACTUATED
W	SA2	039583	090681	BA	V115				NA	RAD MONITOR 2R12A BATTERY PACK FAILED	NO CAUSE GIVEN
W	SE1	032339	080780	BA	E147					D/G BTTRY 18-B CELL 51 SHORTED AND FAILED	NO CAUSE GIVEN
W	SE1	032342A	081280	BA	E147				3	D/G BTTRY 18-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	SE1	032342B	081380	BA	E147				3	D/G BTTRY 18-B CELLS 49,50,51 DISCHARGED	INADEQUATE PROCEDURE
W	SU2	169141	081981	BC				N	NA	SMOKE DET SYS INOP BTTRY CHRGR LOST POWER	FAULTY POWER SUPPLY CARD IN CHARGER
W	SU2	038473	090681	BA	P435					SOMKE DETECTOR BATERY FOUND NOT TO TAKE A CHARGE	NO CAUSE GIVEN
W	SU2	038936A	100181	BA	E355				NA	SMOKE DETECTOR BATTERY FAILED	CHARGER NOT CHARGING BATTERY
W	SU2	038936B	100181	BC	E355				NA	BATTERY CHARGER FOR SMOKE DETECTOR BATTERY FAILED	NO CAUSE GIVEN
W	TR1	014563	032476	BA	C173			D	NA	ESF DC PWR SUPPLIES SURV REQ PERFORMD AT WRNG FREQ	PROCEDURE DID NOT USE FREQ REQ BY T.S.
W	TR1	020985	031778	BA	E226	125		D	NA	125 VDC ELECTRICAL SYS OP NOT VERIFIED WK OF 2-26	MAINT PERS FAILD TO INSURE SURV COMPLETED
W	TR1	025211A	011979	BA	E226	125		D	NA	125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TR1	025211B	011979	BC	E226	125		D	NA	125 VDC ELECTRICAL SYSTEM NOT VERIFIED	PERSONNEL
W	TR1	032622	090380	BA					NA	DIESEL-DRIVEN AFWP FAILD TO START FROM MANUAL SIG	FAILED STARTING BATTERY
W	TU3	022061A	122277	BA	C173			D	NA	EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL
W	TU3	022061B	122977	BA	C173			D	NA	EQUALIZING CHARGES ON STATION BATTERIES NOT PERFO-	-RMED. PERSONNEL ERROR,FULL CAPACITY AVL

ADDITIONAL INFORMATION CONTAINED IN BATTERY AND BATTERY CHARGER ONE-LINE DESCRIPTIONS

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	CUMP	MANUFACTURERS	VOLTAGE	REPAIR	FLAGGING	CEC #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
W	TU3	033530A	121180	BC		125			NA	PROBLEMS WITH 4B 125 VDC BATTERY CHARGER	NO CAUSE GIVEN
W	TU3	0335338	121180	BA		125			NA	4B 125 VDC BATT DOS,TECH SPEC EXCEEDED	PROBLEM W/ ASSOCIATED BTTRY CHARGER
W	TU3	039363	111281	BA	C173	125			NA	"3A" 125 VDC FAILED TO HOLD A CHARGE	BEING EVALUATED W/ MANUFACTURER
W	YR1	019476A	101477	BC					NA	NO. 2 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING
W	YR1	0194768	101477	BC					NA	NO. 1 BATTERY CHARGER CROSS TIED TO NO. 2 BATTERY	OVERSIGHT CAUSE LCO STATED IN TECH SPEC
W	YR1	019640	110577	BC					NA	NO. 1 BATTERY CHARGER TAKEN OUT OF SERVICE	FAILED BEARING DUE TO NORMAL WEAR
W	YR1	019861	120577	BA	E355					CELL VOLTAGE ON CELL 18 OF BANK 1 FOUND LOW	NO CAUSE FOUND,CELL REPLACED
W	ZI1	171128A	121281	BA				N	NA	UNIT 2 212 BATTERY TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
W	ZI1	1711288	121281	BC				N	NA	UNIT 2 212 CHARGER TAKEN OOS ERRONEOUSLY	LICENSED OPERATOR ERROR
W	ZI1	172130	121581	BA				N		EQUALIZING CHARGE NOT PLACED ON BATTERY 112	PROCEDURE NOT CLEAR ON COMMUNICATIONS
G	BF1	038085	072281	BA	E226	250				250 VOLT MAIN BATTERY TAKEN OOS TO BYPASS A CRACK-	-ED CELL.
G	BF2	015394	070976	BA	C173			A		NEUTRON MONITORING BATTERY 2A MADE INOPERABLE	CNNCTR BROKEN OFF A CELL POST PERS ERROR
G	BF2	029671	041979	BA	C173				3	BROKEN TERMINAL DISCOVERED ON S/D BOARD "D" BTTRY	PERSONNEL ERROR. ALSO AFFECTED UNIT 1
G	BP1	015249A	063076	BC	E355	125			NA	STATION BATTERY CHARGER FAILED	DEFECTIVE SILICON RECTIFIERS
G	BP1	0152488	063076	BA	E355	125			NA	LOAD ON BTTRY REDUCED VOLTAGE & SPECIFIC GRAVITY	STATION BATTERY CHARGER HAD FAILED
G	BP1	015326A	072276	BA						RDS BATTERY D PILOT CELL LOW ELECTROLYTE LEVEL	EXACT CAUSE UNKNOWN
G	BP1	0153268	072276	BA						RDS BATTERY D PILOT CELL HAD LOW SPECIFIC GRAVITY	ADDITION OF WATER POSSIBLE CAUSE
G	BP1	015327A	072876	BA						RDS BTTRY C PILOT CELL LOW ELECTROLYTE LEVEL	UNKNOWN CAUSE
G	BP1	015327B	072976	BA						RDS BTTRY C PILOT CELL RDG LO SPECIFIC GRAVITY	DFCTV PROC SPECIFIC GRAVITY READ TOO SOON
G	BP1	015444	081276	BA		024		C	NA	EMERGENCY DIESEL GENERATOR DID NOT START DUE TO L-	-OOSE BATTERY CONNECTION.
G	BP1	016073B	100376	BA					4	RDS D BTTRY PILOT & 3 OTHER CELLS LO ELECTROLYTE -	-LEVEL. UNKNOWN CAUSE
G	BP1	016073A	100476	BA					4	RDS D BTTRY PILOT & 3 OTHER CELLS LO SPEC GRAVITY	INCOMPLETE ELECTROLYTE MIXING
G	BP1	016305A	102176	BA						RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	015459	110476	BA						RDS B PILOT CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE
G	BP1	0163358	112176	BA						RDS "A" BTTRY PILOT CELL 55 LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	016584	120276	BA						RDS B BTTRY PILOT CELL 27 LO SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	017023	120976	BA						RDS B ONE CELL LOW SPECIFIC GRAVITY	UNKNOWN CAUSE VENDOR INVESTIGATING
G	BP1	017024*	010477	BA				D	6	6 CELLS SPECIFIC GRAVITY FOUND BELOW 1.2. EVALUA-	-TION REVEALED ADEQUATE CAPACITY
G	BP1	017464	022477	BA						RDS BATTERY B HAD ONE CELL BELOW MINIMUM SPECIFIC-	-GRAVITY. ADEQUATE CAPACITY AVAILABLE
G	BP1	017463	031777	BA					5	SPECIFIC GRAVITY FOUND LOW IN 5 CELLS OF RDS BTTRY-	-"A". ADEQUATE CAPACITY AVAILA

ADDITIONAL INFORMATION CONTAINED IN BATTERY AND BATTERY CHARGER ONE-LINE DESCRIPTIONS

NSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	MANUFACTURERS	VOLTAGING	REPAIRE	FLAGGING	CELL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	BP1	017704*	033077	BA	E355			D	NA	NO OUTPUT FROM ALL UPS BATTERY BANKS	CONNECTORS NOT TIGHTENED DURING INITAL
G	BP1	018096A	042177	BA						RDS BATTERY B, CELL 27 FOUND TO HAVE LOW SPECIFIC -	-GRAVITY OF 1.191. FULL CAPACITY AVAIL
G	BP1	0180958	042777	BA					10	SPECIFIC GRAVITY OF 10 MARGINAL CELLS ADJUSTED OF-	-RDS BATTERY B. FULL CAPACITY AVAILABLE
G	BP1	018462A	061677	BA	E355					WATER ADDED TO CELL 27 OF RDS BATTERY "B"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	0184628	061677	BA	E355					SPECIFIC GRAVITY OF CELL 27 OF RDS BATTERY B LOW	WATER ADDED THEN TESTED TOO SOON
G	BP1	019023A	082977	BA	E355			C	NA	DIESEL FIRE PUMP "A" BATTERY FOUND WITH NO OUTPUT	CONNECTORS NOT TIGHTENED
G	BP1	019025B	082977	BA	E355			C	NA	DIESEL FIRE PUMP "B" BATTERY FOUND FAILED WITH NO-	-OUTPUT. DISCHR WITH NO APPARENT CAUSE
G	BP1	019472A	092977	BA	E355					WATER ADDED TO CELL 12 OF RDS BATTERY "A"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	0194728	092977	BA	E355					SPECIFIC GRAVITY OF CELL 12 OF RDS BATTERY "A" LOW	WATER ADDED, CHARGE INSUFFICIENT TO MIX
G	BP1	019542A	100877	BA	E355				3	WATER ADDED TO 3 CELLS OF RDS BATTERY "D"	NO CAUSE GIVEN FOR LOW WATER LEVEL
G	BP1	019542B	102077	BA	E355			C	3	SPECIFIC GRAVITY OF 3 CELLS OF RDS BATTERY "D" LOW	WATER ADDED, MIXING WAS INADEQUATE
G	BP1	020176	122277	BA			8			SPECIFIC GRAVITY ON RDS BATTERY "A", CELL 12 LOW	EQUALIZING CHARGE FOR 8 HOURS CORRECTED
G	BP1	021357	050476	BA	E355				3	FIRE PUMP DIESEL STARTG BTTRY A CELLS 1,3,5 LO --	ELECTROLYTE SOLN. EXACT CAUSE UNKNOWN
G	BP1	021519	052578	BA	E355				3	FIRE PUMP DIESEL STARTG BTTRY "A" CELLS 2,4,6 LO--	ELECTROLYTE SOLN. INADQ MAINTENANCE PROC
G	BP1	022564	083178	BA	E355					RDS BATTERY A, CELL 12 LO SPECIFIC GRAVITY READING	EXACT CAUSE UNKNOWN
G	BP1	027985	110179	BA	E355					SPECIFIC GRAVITY OF CELL 48 OF RDS BATTERY C LOW	CELL REPLACED, WOULD NOT TAKE EQUAL CHARGE
G	BP1	030237	012480	BA	E355					RDS C BTTRY CELL 14 LOW SPECIFIC GRAVITY RDG	DEFECTIVE CELL REPLACED
G	BP1	031176	050180	BA	E355					RDS BTTRY "A" CELL 2 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BP1	031848	071080	BA	E355				2	RDS C BTTRY CELLS 35,54 LOW SPECIFIC GRAVITY RDG	CELL DID NOT RESPOND ADQ TO EQUALIZG CHRG
G	BP1	032023	071880	BA	E355					RDS C BTTRY PILOT CELL UNIT-9 INTERNAL RESISTANCE-	-INCRS. CAUSE UNKNOWN
G	BP1	032297	080780	BA	E355				6	RDS C BTTRY CELLS 33,39,55 LOW SPECIFIC GRAVITY	VENDOR REASON INCRS IN FLOAT VOLTAGE LEVEL
G	BP1	032656	091180	BA	E355					RDS D BATTERY CELL 12 LOW SPECIFIC GRAVITY RDG	CELL DID NOT ADQ RESPOND TO EQUALIZG CHRG
G	BP1	033544	121180	BA	E355				21	21 CELLS OF RDS "A" BATTERY LOW SPECIFIC GRAVITY	CELL TERMINALS INADQ CLEANED BY MAINT PER
G	BP1	033637	122380	BA				D	NA	DC BATTERY MONTHLY TESTS OVERDUE	INADQ ADMIN CONTROLS & PERSONNEL ERROR
G	BP1	033734	010281	BA	E355					RDS CH D BATTERY CELL 56 HAD LOW SG, WOULD NOT RES-	-POND TO EQUALIZING CHARGE.
G	BP1	033112	081561	BA						FOUND PILOT CELL IN CH A RDS POWER SUPPLY WITH A -	-HIGH ELEC LEVEL. POSSIBLY OVERFILLED
G	BP1	038592	083181	BA	E355					LOW SG IN CELL 43 OF ST BTTRY, CELL FOUND CRACKED.-	-THIS LEAD TO DILUTION, CRACKED WHEN MOVED
G	BP1	038785	091581	BA	E355					"A" RDS BTTRY CELL #5 LOW SPECIFIC GRAVITY	CELL DIDN'T RESPOND ADQ TO EQUALIZG CHRG
G	BR1	019389	122177	BC					NA	BATT CHRGR DC OUTPT FUSE FAILD WHEN CHRG BATT 2B-2	HI CURR/TEMP CAUSD SOLDERD LINKS SEPARATE
G	BR1	025637A	032979	BA	G185	125			NA	BATTERY 1B2 VOLTAGE FELL TO 102.5V THEN ROSE TO -	-118V. CORRODED AND LOOSE BTTRY CONNECT

ADDITIONAL INFORMATION CONTAINED IN BATTERY AND BATTERY CHARGER ONE-LINE DESCRIPTIONS

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	MANUFACTURERS	VOLTAGE	REPAIR	FLAGGING	CELL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	BR1	0256378	032779	BA	G185	125			NA	BTTRY 181 VOLTAGE FELL TO 96.8V THEN ROSE TO 118V	CORRODED AND LOOSE BTTRY CONNECTORS
G	BR2	014651	021276	BA						MONTHLY INSTEAD OF QUARTERLY BATTERY P.T. PERFORMD	WRONG P.T. SCHEDULED BY MISTAKE
G	CD1	022101A	062778	BC	E355	250			NA	1A 250V BTTRY CHRGR TIE BREAKER TRIPPED	POOR CNNCTR CNTCTS IN CURRENT MODULE
G	CD1	022101B	062778	BC	E355	250			NA	1A 250V BTTRY CHRGR INPUT BREAKER TRIPPED	LOOSE CNNCTN AT CHRGR INPUT BKR PHASE A
G	CD1	037646	050581	BC	E355				NA	HIGH RIPPLE FROM BATTERY CHARGER WHICH FAILED INV-	-ERTER 1A. FAILED SCR
G	CD1	037939	052881	BA	E355				NA	SG TESTS FOR 125V 1A&B AND 250V 1B NOT PERFORMED -	-PROPERLY. PERSONNEL USED WRONG HYDROM
G	DA1	030982	041780	BA				D	NA	WKLY BATT SURV DOCUMENTATION NOT COMPLETED	PERSONNEL ERROR-NONLIC. OPERATIONS PERS
G	DA1	171665	120981	BC	P319	024		N	NA	BATTERY CHARGER OUTPUT INCORRECT	UNKNOWN
G	DR1	018553A	072977	BA	U125			D	NA	DIESEL FIRE PUMP BATTERIES FAILED TO START DIESEL	FAILED FUSE FROM BATTERY CHARGER CIRCUIT
G	DR1	018553B	072977	BC	U125				NA	FUSE FOUND BLOWN IN DIESEL FIRE PUMP BATTERY CHAR-	-GER.
G	DR2	039116	102181	BA	G185			D	NA	QUARTERLY STORAGE BATTERY SURVEILLANCE DONE 3 DAY-	-S LATE. OVERSIGHT BY OPERATING SHIFT
G	DR3	016265A	101876	BA	G185	250				BATTERY IN A DEGRADED CONDITION	CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"
G	DR3	0162658	101876	BC	G185	250			NA	CHARGER SUBJECTED BTTRY TO "DEEP CYCLING"	UNKNOWN CAUSE
G	DR3	020953	032878	BA	G185	048			4	24/48 V BTTRY FAILED THE REFUELING OUTAGE DISCHRG-	-TEST. 4 CELLS REPLCD NAT'L END OF LIFE
G	DR3	025951	042479	BA		250		C	NA	UNIT 2'S BATTERY NOT RETURNED TO NORMAL LINEUP	BREAKER COULD HAVE BEEN SHUT AT ANY TIME
G	DR3	036569	030381	BA	G185			D	NA	WEEKLY STORAGE BATTERY SURVEILLANCE DONE 4 DAYS L-	-ATE. OVERSIGHT BY OPERATING SHIFT
G	EN1	021475*	060476	BC	E355			D	NA	HEAT-SENSITIVE XSTR ON BATT CHRGR FIRING MODUL CRD	SHOULD BE A NON-HEAT-SENSITIVE TRANSISTOR
G	EN1	021713	062778	BA	E355					WKLY PILOT CELL SURV OF 1C D/G BTTRY NOT COMPLET--	ED ON TIME. PERSONNEL OVERSIGHT
G	EN1	027782	112679	BA				F		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	EN2	C22203	081676	BA	G190			F		WKLY PILOT CELL SURV OF PLANT BATT NOT COMPLETED--	ON TIME. NOTICES ROUTED TO ABSENT PERS
G	EN2	026557	071879	BA				F		CELL SURVEILLANCE REQUIREMENT NOT PERFORMED	PERSONNEL OVERSIGHT
G	EN2	030651*	032580	BC	E355				NA	EMER STATION BATT CHRGR 2A-2B FAILD TO HOLD LOAD	VOLTG CNTRL & CURR LMT MODULES TUNED
G	EN2	030711A	032780	BC	E355				NA	STATION BATT CHRG 2A-2B FAILED TO MAINTAIN LOADS	SILICON CNTRL RECTIFIERS NEED LOAD BALANC
G	EN2	030711B	032780	BC	E355				NA	STATION BATT CHRG 2C FAILED TO MAINTAIN LOAD	CURRENT LIMIT MODULE NEEDED ADJUSTMENT
G	EN2	033391	081180	BA					NA	DC BATT GROUND ON 2B STATION SERVICE BATTERY	NO CAUSE GIVEN
G	EN2	032781A	032381	BA	G080					POST TREATMENT MON 2D11-K615A BATTERY DRAINED	BATTERY CHARGER 2AB 24/48 VDC FAILED
G	EN2	032781B	032381	BC	G080	048				24/48 VDC BATTERY CHARGER FOUND NOT CHARGHING	NO CAUSE GIVEN
G	EN2	036943A	040781	BA	G185			E	2	ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF 2T -	-BTTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943B	040781	BA	G185			E	2	ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF 2T B-	-TTRYS 2R42-S001A&B. PERSONNEL ERROR
G	EN2	036943C	040781	BA	G185			E	2	ELECTROLYTE LEVEL FOUND HIGH IN SOME CELLS OF DIE-	-SEL GENERATOR BATTERY. PERSONNEL ERROR

ADDITIONAL INFORMATION CONTAINED IN BATTERY AND BATTERY CHARGER ONE-LINE DESCRIPTIONS

NSSS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	MANUFACTURERS	VOLTAGE	REPAIR TIME	FLAGGING	CELL #		FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	EN2	0369430	040781	BA	G185			E	2		ELECTROLYTE LEVEL FOUND LOW IN SOME CELLS OF DIES-	-EL GENERATOR BATTERY. PERSONNEL ERROR
G	FP1	019457	102077	BA	G185		1				STATION BATTERY "B" FOUND TO HAVE CRACKED CELL	NO CAUSE KNOWN FOR CRACKED CELL #228
G	FP1	021433	053178	BA							LO S.G. OF BTRY A2 CELL 1	BAD CELL IN BATTERY
G	FP1	026922	090479	BA	G185						LEAKING CELL NOTED IN BATTERY "B". BATTERY TEMPOR-	-ARILY INOP WHILE CELL JUMPERED
G	FP1	031743*	062880	BA		024			2		DIESEL FIRE PUMP 24V BATT CELLS A2-6,B2-1 LOW S.G.	CHARGER OOS DURING SURVEILLANCE
G	FP1	033230	111760	BA	G185		2				STATION BTTRY B MADE INOP TO JUMP A CELL	CELL #8 POOR PERFORMANCE DUE TO AGE
G	FP1	171811	123081	BA		024		N	NA		LOW VOLTAGE FROM DIVISION I 24 VCDC BATTERIES,CAUS	-ED ERRATIC READINGS ON LRM & SRM INST
G	MI1	014479	040776	BA	C173			D	NA		SWITCHYARD BTTRY SURVEILLANCE NOT PERFORMED W/IN--	REQ TIME PERIOD. PERSONNEL ERROR
G	MO1	166730A	061581	BA		250		N	NA		250 VDC BATTERY INADVERTENTLY DISCHARGED	PERS DISCONNECTED TEMP BATTERY CHARGER
G	MO1	1667308	061581	BC		250		N	NA		TEMPORARY BATTERY CHARGER TAKEN OUT OF SERVICE	PERSONNEL ERROR,CAUSED BTTRY TO DISCHARGE
G	OC1	018293A	062877	BA		125	264		NA		ONE OF TWO SWITCHING STATION BATTERIES FOUND OOS -	-FOR 11 DAYS. BATTERY CHARGER FAILED
G	OC1	0182938	062877	BC		125	264		NA		BATTERY CHARGER FOR SWITCHING STATION BATTERY FOU-	-ND OOS AFTER 11 DAYS
G	OC1	021497A	052478	BA				D	NA		D/G BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	021497B	052478	BA				D	NA		STATION BTTRY LOAD TESTING NOT PERFORMED IN TIME	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	023298A	121378	BA				D	NA		D/G BTTRY NOT TESTED/MONITORED W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	0232988	121378	BA				D	NA		STATION BTTRY NOT TEST/MONITOR W/IN TIME INTERVAL	FAILD TO ADHERE TO SURVEILLANCE SCHEDULE
G	OC1	030599A	022880	BA					NA		MAIN STATION BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	OC1	030599B	022880	BA					NA		DIESEL GENERATOR BTTRY SURV TEST NOT PERFORMED	PLANT PERS FAILD TO ADHERE TO SURV SCHEDU
G	OC1	038737	091181	BA	E355			D	NA		BATTERY SURVEILLANCE PROCEDURES FOUND NOT TO FULL-	-Y COMPLY WITH NEW REQUIREMENTS.
G	PB3	014211	012976	BA	E355			E			B BTTRY CAPACITY BELOW DESIGN	CELL S.G. IN LO RNG, PARTIAL ACID RPLCD
G	PI1	027950A	122379	BC	E226	125	264	C	NA		SWITCHYARD 125 VDC BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	PI1	027950B	122479	BC	E226	125	24	C	NA		SWITCHYARD 125 VDC BACKUP BATTERY CHARGER FAILED	NO CAUSE GIVEN
G	PI1	033899	082180	BC	E355	125			NA		"A" 125 VDC CONTROL BATT CHARGER INOPERABLE	VOLTAGE REGULATOR ELECTRONIC MODULES RPLC
G	QC1	019222	092477	BA	G185	250		D	12		BATTERY SYSTEM TAKEN OUT OF SERVICE	REPLACED 12 WEAK CELLS,NORMAL END OF LIFE
G	QC2	018164	031777	BC	G185	250			NA		UNITS BATTERY CHARGER APPARENTLY INOPERABLE	FAULTY INDUCTIVE CURRENT CONTROL CIRCUIT
G	QC2	019460	060977	BC	G185	250			NA		BATTERY CHARGER SUPPLYING CURRENT TO BATTERY FOUN-	-D LOW. FLOATING POTENTIOMETER SET LOW
G	VY1	016217A	101376	BA					NA		UPS-1B CNTRL PWR BTTRY VOLTAGE WAS LOW	CNTRL BATT CHRGNG POWER SUPPLY FAILED
G	VY1	0162178	101376	BC					NA		CNTRL BTTRY CHARGING POWER SUPPLY FAILED	INOPERATIVE VOLTAGE REGULATOR CIRCUIT
G	VY1	018407A	031877	BA				A	NA		UPS-1B ALARMED DUE TO LOW VOLTAGE,CAUSED SCRAM	CAPACITOR FAILED IN CHARGING POWER SUPPLY
G	VY1	0184078	031877	BC				A	NA		UPS-1B CONTROL CHARGING POWER SUPPLY FAILED	FAILED CAPACITOR IN ON/OFF CIRCUITRY

ADDITIONAL INFORMATION CONTAINED IN BATTERY AND BATTERY CHARGER ONE-LINE DESCRIPTIONS

NSRS	PLANT	CONTROL NUMBER	EVENT DATE	COMP	MANUFACTURERS CODES	VOLTAGE	REPAIR TIME	FLAGGING	CELL #	FAILURE MODE DESCRIPTION	FAILURE CAUSE DESCRIPTION
G	VY1	021749	061978	BC		125				NA AC INPUT PWR TO CA1 BATT CHRGR TRPD OPEN	SPURIOUS TRP OF AC BRKR IN AN ELEC STORM
G	VY1	C25519	031779	BC	E355					NA CONTROL CHARGING POWER SUPPLY FAILED	NO CAUSE GIVEN. CAUSED BATTERIES DISCHR