SAFETY EVALUATION REPORT BY THE
OFFICE OF NUCLEAR REACTOR REGULATION
EQUIPMENT QUALIFICATION BRANCH
FOR TENNESSEE VALLEY AUTHORITY
SEQUOYAH UNITS 1 AND 2
DOCKET No. 50-327/328

CONTENTS

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ENVIRONMENTAL QUALIFICATION OF SAFETY-RELATED ELECTRICAL EQUIPMENT

1 INTRODUCTION

General Design Criteria 1 and 4 specify that safety-related electrical equipment in nuclear facilities must be capable of performing its safety-related function under environmental conditions associated with all normal, abnormal, and accident plant operation. In order to ensure compliance with the criteria, the NRC staff required all licensees of operating reactors to submit a reevaluation of the qualification of safety-related electrical equipment which may be exposed to a harsh environment. The staff additionally required the near-term operating license applicants to reassess and evaluate their environmental qualification documentation and/or test data for their safety-related electrical equipment.

2 BACKGROUND

By letters dated October 11, 1979 and February 19 and 21, 1980, the NRC Office of Nuclear Reactor Regulation requested operating license applicants to review and evaluate the environmental qualification documentation for each item of safety-related electrical equipment and to identify the degree to which their qualification program complies with the staff's positions as described in NUREG-0588, "Interim Staff Position on Environmental Qualification of Safety-Related Electrical Equipment." The applicants were directed to provide a submittal reporting the results of this review.

On February 8, 1979, the NRC Office of Inspection and Enforcement (IE) issued to all licensees of operating plants (except those included in the systematic evaluation program (SEP)) IE Bulletin IEB 79-01, "Environmental Qualification of Class IE Equipment." This bulletin, together with IE Circular 78-08 (issued on May 31, 1978), required the licensees to perform reviews to assess the adequacy of their environmental qualification programs.

Subsequently, Commission Memorandum and Order CLI-80-21 (issued on May 23, 1980) states that the DOR guidelines and portions of NUREG-0588 (which were issued on January 14, 1980, as enclosures 4 and 5 to IEB-79-01B) form the requirements that licensees must meet regarding environmental qualification of safety-related electrical equipment in order to satisfy those aspects of 10 CFR 50, Appendix A, General Design Criterion (GDC)-4. This order also requires the staff to complete safety evaluation reports (SERs) for all operating plants by February 1, 1981. In addition, this order requires that the licensees have qualified safety-related equipment installed in their plants by June 30, 1982.

Supplements to IEB 79-01B were issued for further clarification and definition of the staff's needs. These supplements were issued on February 29, September 30, and October 24, 1980.

In addition, the staff issued orders dated August 29, 1980 (amended in September 1980) and October 24, 1980 to all licensees. The August order required that the licensees provide a report, by November 1, 1980, documenting the qualification of safety-related electrical equipment. The October order required the establishment of a central file location for the maintenance of all equipment-qualification records. The central file was mandated to be established by December 1, 1980. The order also required that all safety-related electrical equipment be qualified by June 30, 1982. In response, the licensee submitted information through letters dated June 16 and October 31, 1980, and February 5, 1981.

2.1 Purpose

The purpose of this SER is to identify equipment whose qualification program does not provide sufficient assurance that the equipment is capable of performing the design function in hostile environments. The staff position relating to any identified deficiencies is provided in this report.

2.2 Scope

The scope of this report is limited to an evaluation of the equipment which must function in order to mitigate the consequences of a loss-of-coolant accident (LOCA) or a high-energy-line-break (HELB) accident, inside or outside containment, while subjected to the hostile environments associated with these accidents.

3 STAFF EVALUATION

The staff evaluation of the licensee's response included an onsite inspection of selected Class IE equipment, audits of environmental qualification documentation, and an examination of the licensee's report for completeness and acceptability. The criteria described in NUREG-0588 were used as a basis for the staff evaluation of the adequacy of the licensee's qualification program.

The NRC Office of Inspection and Enforcement performed an onsite verification inspection (during the week of December 15, 1980) of selected safety-related electrical equipment. Selected components in the emergency raw cooling water, feedwater, and component coolant water systems were inspected at Unit 1, and selected components in the reactor coolant, emergency raw cooling water, and chemical and volume control systems were inspected at Unit 2. This inspection verified proper installation of equipment, overall interface integrity, and manufacturers' nameplate data. The manufacturer's name and model number from the nameplate data were compared to information given in the Component Evaluation Work Sheets (CES) of the licensee's report. The site inspection is documented for Unit 1 in report IE 50-327/80-48 and for Unit 2 in report IE 50-328/80-26. No significant deficiencies were noted. For this review, the documents referenced above have been factored into the overall staff evaluation. The NRC Office of Nuclear Reactor Regulation performed audits on August 5 and 6, 1980 and December 17-19, 1980 of environmental qualification documentation and/or test data for 18 items in Unit 1. Because equipment in Units 1 and 2 is essentially identical, with few exceptions, the results of the Sequoyah Unit 1 audits may be applied to Unit 2. No significant concerns were identified during the IE inspection or the NRR audits.

3.1 Completeness of Safety-Related Equipment

In accordance with IEB 79-01B and NUREG-0588, the licensee was directed to (1) establish a list of systems and equipment that are required to mitigate a LOCA and an HELB and (2) identify the most limiting environmental conditions the equipment may be exposed to and still be required to perform its safety function.

The staff developed a generic master list based upon a review of plant safety analyses and emergency procedures. The instrumentation selected includes parameters to monitor overall plant performance as well as to monitor the performance of the systems on the list. The systems list was established on the basis of the functions that must be performed for accident mitigation (without regard to location of equipment relative to hostile environments).

The list of safety-related systems provided by the licensee was reviewed against the staff-developed master list.

Based upon information in the licensee's submittal, the equipment location references, and in some cases subsequent conversations with the licensee, the staff has verified and determined that the systems included in the licensee's submittal are those required to achieve or support: (1) emergency reactor shutdown, (2) containment isolation, (3) reactor core cooling, (4) containment heat removal, (5) core residual heat removal, and (6) prevention of significant release of radioactive material to the environment. However, the licensee did not include the safeguards actuation system, the pressurizer spray system and the accumulators. The licensee should address or justify the omission of these systems. The staff therefore concludes that the systems identified by the licensee (listed in Appendix D) are acceptable, with the exceptions of those items noted above and discussed in Section 5 of this report.

Display instrumentation which provides information for the reactor operators to aid them in the safe handling of the plant was not specifically identified by the licensee. A complete list of all display instrumentation mentioned in the LOCA and HELB emergency procedures must be provided. Equipment qualification information in the form of summary sheets should be provided for all components of the display instrumentation exposed to harsh environments. Instrumentation which is not considered to be safety related but which is mentioned in the emergency procedure should appear on the list. For these instruments, (1) justification should be provided for not considering the instrument safety related and (2) assurance should be provided that its subsequent failure will not mislead the operator or adversely affect the mitigation of the consequences of the accident. The environmental qualification of post-accident sampling and monitoring and radiation monitoring equipment is closely related to the review of the TMI lessons-learned modifications and will be performed in conjunction with that review.

The licensee identified 1173 items of equipment which were assessed by the staff. Because Units 1 and 2 are nearly identical, the review can be performed as one. Where necessary, differences in the units will be noted for clarity.

3.2 Service Conditions

Commission Memorandum and Order CLI-80-21 requires that the DOR guidelines and the "For Comment" NUREG-0588 are to be used as the criteria for establishing

the adequacy of the safety-related electrical equipment environmental qualification program. These documents provide the option of establishing a bounding pressure and temperature condition based on plant-specific analysis identified in the licensee's Final Safety Analysis Report (FSAR) or based on generic profiles using the methods identified in these documents.

On this basis, the staff has assumed, unless otherwise noted, that the analysis for developing the environmental envelopes for Sequoyah Units 1 and 2--relative to the temperature, pressure, and the containment spray caustics--has been performed in accordance with the requirements stated above. The staff has reviewed the qualification documentation to ensure that the qualification specifications envelope the conditions established by the licensee. In addition, the staff assumed, and requires the licensee to verify, that the containment spray system is not subjected to a disabling single-component failure.

Equipment submergence has also been addressed where the possibility exists that flooding of equipment may result from HELBs.

3.3 Temperature, Pressure, and Humidity Conditions Inside Containment

The licensee has provided the results of accident analyses as follows:

		Max. Temp. (°F)	Max. Press. (psig)
LOCA	Lower Compartment	244	12.0
	Upper Compartment	170	12.0
MSLB	Lower Compartment	327	10.8
	Upper Compartment	140	10.8

The licensee's minimum temperature profile for qualification purposes in the lower compartment is based on an MSLB analysis and is acceptable for use because there is reasonable assurance under both MSLB and LOCA conditions that the actual temperatures and pressures for the postulated accidents will not exceed the environmental zone. However, the licensee's MSLB temperature/pressure profile does not extend beyond 1000 seconds. The staff requires that the licensee extend the profile to at least 10^5 seconds.

The licensee's minimum temperature profile for qualification purposes in the upper compartment is based on the LOCA temperature and is acceptable to the staff.

3.4 Temperature, Pressure, and Humidity Conditions Outside Containment

The licensee has provided the temperature, pressure, humidity, and applicable environment associated with an HELB outside containment. The following areas outside containment have been addressed:

(1) Auxiliary building
(2) Main steam valve vaults

The staff has verified that the parameters identified by the licensee for the MSLB are acceptable.

3.5 Submergence

The maximum submergence levels have been established and assessed by the licensee. Unless otherwise noted, the staff assumed for this review that the methodology employed by the licensee is in accordance with the appropriate criteria as established by Commission Memorandum and Order CLI-80-21.

The licensee's value for maximum submergence is 13.2 ft. In this regard, the Sequoyah design is such that no safety-related equipment is subjected to submergence.

3.6 Chemical Spray

The licensee's FSAR value for the chemical concentration is 2000 ppm boric acid solution; the exact volume percent used by the vendor for qualification testing should be verified by the licensee. Therefore, for the purpose of this review, the effects of chemical spray will be considered unresolved. The staff will review the licensee's response when it is submitted and discuss the resolution in a supplemental report.

3.7 Aging

NUREG-0588, Category II, delineates two aging program requirements. Valve operators committed to IEEE Standard 382-1972 and motors committed to IEEE Standard 334-1971 must meet the Category I requirements of the NUREG. This requires the establishment of a qualified life, with maintenance/replacement schedules based on the findings. All other equipment must be subjected to an aging program which identifies aging susceptible materials within the component. Additionally, the staff requires that the licensee:

(1) establish an ongoing program to review surveillance and maintenance records to identify potential age-related degradations

(2) establish component maintenance and replacement schedules which include considerations of aging characteristics of the installed components

The licensee identified a number of equipment items for which a specified qualified life was established (for example, 5 years, 15 years, or 40 years). In its assessment of these submittals, the staff did not review the adequacy of the methodology nor the basis used to arrive at these values; the staff has assumed that the established values are based on state-of-the-art technology and are acceptable.

For this review, however, the staff requires that the licensee submit supplemental information to verify and identify the degree of conformance to the above requirements. The response should include all the equipment identified as required to maintain functional operability in harsh environments.

The licensee indicated that this phase of the response is outstanding and that the review is in progress. The staff will review the licensee's response when it is submitted and discuss its evaluation in a supplemental report.

3.8 Radiation (Inside and Outside Containment)

The licensee has provided values for the radiation levels postulated to exist following a LOCA. The application and methodology employed to determine these values were presented to the licensee as part of the NRC staff criteria contained in the DOR guidelines, in NUREG-0588, and in the guidance provided in IEB-79-01B, Supplement 2. Therefore, for this review, the staff has assumed that, unless otherwise noted, the values provided have been determined in accordance with the prescribed criteria. The staff review determined that the values to which equipment was qualified enveloped the requirements identified by the licensee.

The value required by the licensee inside containment is an integrated dose of 5×10^7 to 1×10^8 rads. This value envelopes the minimum requirements of NUREG-0588 and is therefore acceptable.

The required value outside containment of 1×10^6 has been used by the licensee to specify limiting radiation levels for areas near RHR pumps within the auxiliary building. This value appears to consider the radiation levels influenced by the source term methodology associated with post-LOCA recirculation fluid lines.

4 QUALIFICATION OF EQUIPMENT

The following subsections present the staff's assessment, based on the licensee's submittal and staff audits, of the qualification status of safety-related electrical equipment.

The staff has separated the safety-related equipment into three categories: (1) equipment requiring immediate corrective action, (2) equipment requiring additional qualification information and/or corrective action, and (3) equipment considered acceptable if the staff's concern identified in Section 3.7 is satisfactorily resolved.

In its assessment of the licensee's submittal, the NRC staff did not review the methodology employed to determine the values established by the licensee. However, in reviewing the data sheets, the staff made a determination as to the stated conditions presented by the licensee. Additionally, the staff has not completed its review of supporting documentation referenced by the licensee (for example, test reports). It is expected that when the review of test reports is complete, the environmental qualification data bank established by the staff will provide the means to cross reference each supporting document to the referencing licensee.

If supporting documents are found to be unacceptable, the licensee will be required to take additional corrective actions to either establish qualification or replace the item(s) of concern. This effort will begin in early 1981.

An appendix for each subsection of this report provides a list of equipment for which additional information and/or corrective action is required. Where appropriate, a reference is provided in the appendices to identify deficiencies. It should be noted, as in the Commission Memorandum and Order, that the deficiencies identified do not necessarily mean that equipment is unqualified. However, they are cause for concern and may require further case-by-case evaluation.

4.1 Equipment Requiring Immediate Corrective Action

Appendix A identifies equipment (if any) in this category. The licensee was asked to review the facility's safety-related electrical equipment. The licensee's review of this equipment has identified three equipment types requiring immediate corrective action. The three items are solenoid valves, level transmitters, and handswitches. The licensee replaced the solenoid valves and the level transmitters with environmentally qualified units. The handswitches were removed from the safety-related control circuits. In addition, in this review, the staff has not identified any safety-related electrical equipment which is not able to perform its intended safety function during the time in which it must operate.

4.2 Equipment Requiring Additional Information and/or Corrective Action

Appendix B identifies equipment in this category, including a tabulation of deficiencies. The deficiencies are noted by a letter relating to the legend (identified below), indicating that the information provided is not sufficient for the qualification parameter or condition.

Legend

R - radiation
T - temperature
QT - qualification time
RT - required time
P - pressure
H - humidity
CS - chemical spray
A - material-aging evaluation; replacement schedule; ongoing equipment surveillance
S - submergence
M - margin
I - HELB evaluation outside containment not completed
QM - qualification method
RPN - equipment relocation or replacement; adequate schedule not provided
EXN - exempted equipment justification inadequate
SEN - separate-effects qualification justification inadequate
QI - qualification information being developed
RPS - equipment relocation or replacement schedule provided

As noted in Section 4, these deficiencies do not necessarily mean that the equipment is unqualified. However, the deficiencies are cause for concern and require further case-by-case evaluation. The staff has determined that an acceptable basis to exempt equipment from qualification, in whole or part, can be established provided the following can be established and verified by the licensee:

(1) Equipment does not perform essential safety functions in the harsh environment, and equipment failure in the harsh environment will not impact safety-related functions or mislead an operator.

(2a) Equipment performs its function before its exposure to the harsh environment, and the adequacy for the time margin provided is adequately justified, and

(2b) Subsequent failure of the equipment as a result of the harsh environment does not degrade other safety functions or mislead the operator.

(3) The safety-related function can be accomplished by some other designated equipment that has been adequately qualified and satisfies the single-failure criterion.

(4) Equipment will not be subjected to a harsh environment as a result of the postulated accident.

The licensee is, therefore, required to supplement the information presented by providing resolutions to the deficiencies identified; these resolutions should include a description of the corrective action, schedules for its completion (as applicable), and so forth. The staff will review the licensee's response, when it is submitted, and discuss the resolution in a supplemental report.

It should be noted that in cases where testing is being conducted, a condition may arise which results in a determination by the licensee that the equipment does not satisfy the qualification test requirements. For that equipment, the licensee will be required to provide the proposed corrective action, on a timely basis, to ensure that qualification can be established by June 30, 1982.

4.3 Equipment Considered Acceptable or Conditionally Acceptable

Based on the staff review of the licensee's submittal, the staff identified the equipment in Appendix C as (1) acceptable on the basis that the qualification program adequately enveloped the specific environmental plant parameters, or (2) conditionally acceptable subject to the satisfactory resolution of the staff concern identified in Section 3.7.

For the equipment identified as conditionally acceptable, the staff determined that the licensee did not

(1) complete and document the equipment material review and evaluation to ensure that no known materials susceptible to degradation because of aging have been used,

(2) establish an ongoing program to review the plant surveillance and maintenance records in order to identify equipment degradation which may be age related, and/or

(3) propose a maintenance program and replacement schedule for equipment identified in item 1 or equipment that is qualified for less than the life of the plant.

The licensee is, therefore, required to supplement the information presented for equipment in this category before full acceptance of this equipment can be established. The staff will review the licensee's response when it is submitted and discuss the resolution in a supplemental report.

5 DEFERRED REQUIREMENTS

IEB 79-01B, Supplement 3 has relaxed the time constraints for the submission of the information associated with cold shutdown equipment and TMI lessons-learned modifications. The staff has required that this information be provided at a later date. The staff will provide a supplemental safety evaluation addressing these concerns.

6 CONCLUSIONS

The staff has determined that the licensee's listing of safety-related systems and associated electrical equipment whose ability to function in a harsh environment following an accident is required to mitigate a LOCA or HELB is complete and acceptable, except as noted in Section 3 of this report. The staff has also determined that the environmental service conditions to be met by the electrical equipment in the harsh accident environment are appropriate, except as noted in Section 3 of this report. Outstanding information identified in Section 3 should be provided within 90 days of receipt of this SER.

The staff has reviewed the qualification of safety-related electrical equipment to the extent defined by this SER and has found no outstanding items which would require immediate corrective action to ensure the safety of plant operation. However, the staff has determined that many items of safety-related electrical equipment identified by the licensee for this review do not have adequate documentation to ensure that they are capable of withstanding the harsh environmental service conditions. This review was based on a comparison of the qualification values with the specified environmental values required by the design, which were provided in the licensee's summary sheets.

Subsection 4.2 identified deficiencies that must be resolved to establish the qualification of the equipment; the staff requires that the information lacking in this category be provided within 90 days of receipt of this SER. Within this period, the licensee should either provide documentation of the missing qualification information or commit to a corrective action (requalification, replacement, relocation, and so forth) consistent with the requirements to establish qualification by June 30, 1982.

Subsection 4.3 identified acceptance and conditional acceptance based on noted deficiencies. Where additional information is required, the licensee should respond within 90 days of receipt of this SER by providing assurance that these concerns will be satisfactorily resolved by June 30, 1982.

Based on these considerations, the staff concludes that conformance with the above requirements and satisfactory completion of the corrective actions by June 30, 1982 will ensure compliance with the Commission Memorandum and Order of May 23, 1980. The staff further concludes that there is reasonable assurance of continued safe operation of this facility pending completion of these corrective actions. This conclusion is based on the following:

(1) there are no outstanding items which would require immediate corrective action to assure safety of plant operation

(2) some of the items found deficient have been or are being replaced or relocated, thus improving the facility's capability to function following a LOCA or HELB

(3) the harsh environmental conditions for which this equipment must be qualified result from low-probability events; events which might reasonably be anticipated during this very limited period would lead to less demanding service conditions for this equipment

APPENDIX A

Equipment Requiring
Immediate Corrective Action
(Category 4.1)

LEGEND:
Designation for Deficiency

R - Radiation
T - Temperature
QT - Qualification Time
RT - Required Time
P - Pressure
H - Humidity
CS - Chemical spray
A - Material aging evaluation, replacement schedule, ongoing equipment surveillance
S - Submergence
M - Margin
I - HELB evaluation outside containment not completed
QM - Qualification method
RPN - Equipment relocation or replacement, adequate schedule not provided
EXN - Exempted equipment justification inadequate
SEN - Separate effects qualification justification inadequate
QI - Qualification information being developed
RPS - Equipment relocation or replacement schedule provided

Equipment Description	Manufacturer	Component No.	Deficiency
*Solenoid Valve	ASCO	FSV-30-46A	R
*Solenoid Valve	ASCO	FSV-30-47A	R
*Solenoid Valve	ASCO	FSV-30-48A	R
*Solenoid Valve	ASCO	FSV-32-110A	R
*Solenoid Valve	ASCO	FSV-32-110B	R
*Solenoid Valve	ASCO	FSV-32-111A	R
*Solenoid Valve	ASCO	FSV-32-111B	R
#Handswitch	Cutler-Hammer	1-HS-1-15B	A,P,T,H,R,QT
#Handswitch	Cutler-Hammer	1-HS-1-16B	A,P,T,H,R,QT
#Handswitch	Cutler-Hammer	1-HS-1-17B	A,P,T,H,R,QT
#Handswitch	Cutler-Hammer	1-HS-1-18B	A,P,T,H,R,QT

Equipment Description	Manufacturer	Component No.	Deficiency
#Handswitch	Cutler-Hammer	1-HS-3-33B	A,P,T,H,R,QT
#Handswitch	Cutler-Hammer	1-HS-3-47B	A,P,T,H,R,QT
#Handswitch	Cutler-Hammer	1-HS-3-87B	A,P,T,H,R,QT
#Handswitch	Cutler-Hammer	1-HS-3-100B	A,P,T,H,R,QT
#Handswitch	Cutler-Hammer	1-HS-72-40B	A,P,T,H,R,QT
#Handswitch	Cutler-Hammer	1-HS-72-41B	A,P,T,H,R,QT
†*Level Transmitter	Foxboro	LT-3-43	T,R
†*Level Transmitter	Foxboro	LT-3-56	T,R
†*Level Transmitter	Foxboro	LT-3-98	T,R
†*Level Transmitter	Foxboro	LT-3-111	T,R

Corrective Action

*Note: Equipment replaced with environmentally qualified units.

#Note: These handswitches have been removed from service by disconnecting and eliminating their function from the control circuit.

†See Attachment 1: Foxboro Letter (3/12/81) "Potential Deficiency Affecting Foxboro Transmitters," For Corrective Action.

APPENDIX B

Equipment Requiring Additional Information
and/or Corrective Action
(Category 4.2)

LEGEND:
Designation for Deficiency

R - Radiation
T - Temperature
QT - Qualification Time
RT - Required Time
P - Pressure
H - Humidity
CS - Chemical spray
A - Material aging evaluation, replacement schedule, ongoing equipment surveillance
S - Submergence
M - Margin
I - HELB evaluation outside containment not completed
QM - Qualification method
RPN - Equipment relocation or replacement, adequate schedule not provided
EXN - Exempted equipment justification inadequate
SEN - Separate effects qualification justification inadequate
QI - Qualification information being developed
RPS - Equipment relocation or replacement schedule provided

Equipment Description	Manufacturer	Component No.	Deficiency
†Transmitter	Foxboro	LT-3-56	QT,A,M
†Transmitter	Foxboro	LT-3-43	QT,A,M
†Transmitter	Foxboro	LT-3-98	QT,A,M
@Solenoid Valve	ASCO	FSV-30-279	R,T,QT,P,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-280	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-157A	R,T,QT,P,H,A,M,QM,QI

*NOTE: Items for which supporting environmental qualification documentation was audited by NRR.
†See Attachment 1: Foxboro Letter (3/12/81) "Potential Deficiency Affecting Foxboro Transmitters," For Corrective Action.
@Item unique to Unit 1 or shared by Units 1 and 2.
$Items Unique to Unit 2.

Equipment Description	Manufacturer	Component No.	Deficiency
Solenoid Valve	ASCO	FSV-30-21	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-22	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-90-108	R,T,QT,P,H,A,CS,M, QM,QI
Solenoid Valve	ASCO	FSV-90-109	R,T,QT,P,H,A,CS,M, QM,QI
Solenoid Valve	ASCO	FSV-90-110	R,T,QT,P,H,A,CS,M, QM,QI
Solenoid Valve	ASCO	FSV-90-114	R,T,QT,P,H,A,CS,M, QM,QI
Solenoid Valve	ASCO	FSV-90-115	R,T,QT,P,H,A,CS,M, QM,QI
Solenoid Valve	ASCO	FSV-90-116	R,T,QT,P,H,A,CS,M, QM,QI
Solenoid Valve	ASCO	FSV-81-12	R,T,QT,P,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-70-85	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-62-77	R,T,QT,P,H,A,M,QM,QI
*Solenoid Valve	ASCO	FSV-62-70	QT,A,M
Solenoid Valve	ASCO	FSV-62-69	QT,A,M
Solenoid Valve	ASCO	FSV-62-72	QT,A,M
Solenoid Valve	ASCO	FSV-62-73	QT,A,M
Solenoid Valve	ASCO	FSV-62-74	QT,A,M
Solenoid Valve	ASCO	FSV-63-71	QT,A,M
Solenoid Valve	ASCO	FSV-62-128	QT,A,M
Solenoid Valve	ASCO	FSV-1-181	CS,R,T,QT,P,H,A,M, QM,QI
Solenoid Valve	ASCO	FSV-1-182	CS,R,T,QT,P,H,A,M, QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Solenoid Valve	ASCO	FSV-1-183	CS,R,T,QT,P,H,A,M, QM,QI
Solenoid Valve	ASCO	FSV-1-184	CS,R,T,QT,P,H,A,M, QM,QI
Solenoid Valve	ASCO	FSV-63-38	QT,A,M
Solenoid Valve	ASCO	FSV-63-41	QT,A,M
Solenoid Valve	ASCO	FSV-63-42	QT,A,M
*Solenoid Valve	ASCO	FSV-63-84	QT,A,M
Solenoid Valve	ASCO	FSV-313-223	R,T,QT,P,H,A,M,CS, RPS
Solenoid Valve	ASCO	FSV-313-225	R,T,QT,P,H,A,M,CS, QM,RPS
Solenoid Valve	ASCO	FSV-313-230	R,T,QT,P,H,A,M,CS, QM,RPS
Solenoid Valve	ASCO	FSV-313-232	R,T,QT,P,H,A,M,CS, QM,RPS
Solenoid Valve	ASCO	FSV-77-127	R,T,QT,P,H,A,M,CS, QM,QI
@Solenoid Valve	ASCO	FSV-30-298	R,T,QT,P,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-299	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-3	R,T,QT,P,H,A,M,QM,RPS
Solenoid Valve	ASCO	FSV-30-6	R,T,QT,P,H,A,M,QM,RPS
Solenoid Valve	ASCO	FSV-30-60	R,T,QT,P,H,A,M,QM,RPS
Solenoid Valve	ASCO	FSV-30-69	R,T,QT,P,H,A,M,QM,RPS
Solenoid Valve	ASCO	FSV-30-146A	R,T,QT,P,H,A,M,QM,RPN
Solenoid Valve	ASCO	FSV-30-146B	R,T,QT,P,H,A,M,QM,RPN
Solenoid Valve	ASCO	FSV-65-10	R,T,QT,P,H,A,M,QM,RPN
@Solenoid Valve	ASCO	FSV-67-162	R,T,QT,P,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
@Solenoid Valve	ASCO	FSV-67-164	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-168	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-170	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-176	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-182	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-184	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-186	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-188	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-190	R,T,QT,P,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-67-213	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-215	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-354	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-356	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-336	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-338	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-344	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-346	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-348	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-350	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-67-352	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-62-143	QT,A,M
Solenoid Valve	ASCO	FSV-62-140A	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-62-140B	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-62-144	R,T,QT,P,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-313-305	R,T,QT,P,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
@Solenoid Valve	ASCO	FSV-313-340	R,T,QT,P,H,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-8	R,T,H,P,QT,CS,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-10	R,T,H,P,QT,CS,A,M,QM,QI
*Solenoid Valve	AVCO	FSV-30-50	R,T,H,P,QT,CS,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-52	R,T,H,P,QT,CS,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-15	R,T,H,P,QT,CS,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-17	R,T,H,P,QT,CS,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-40	R,T,H,P,QT,CS,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-56	R,T,H,P,QT,CS,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-20	R,T,H,P,QT,CS,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-58	R,T,H,P,QT,CS,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-2	R,T,H,P,QT,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-5	R,T,H,P,QT A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-61	R,T,H,P,QT,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-62	R,T,H,P,QT,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-7	R,T,H,P,QT,A,M,QM,QI
Solenoid Valve	AVCO	FSV-30-28A	QT,A,M
Solenoid Valve	AVCO	FSV-30-47A	R,T,H,P,QT,A,M,QM
Solenoid Valve	AVCO	FSV-30-51	R,T,H,P,QT,A,M,QM,QI
Motor Operated Valve	Limitorque	FCV-63-152	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-153	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-156	R,T,QT,P,H,A,M,QM.QI
Motor Operated Valve	Limitorque	FCV-63-157	R,T,QT,P,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Motor Operated Valve	Limitorque	FCV-63-38	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-41	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-42	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-84	R,T,QT,P,H,A,M,QM,QI
Motor Operated Valve	Limitorque	FCV-62-90	QT,A,M
Motor Operated Valve	Limitorque	FCV-62-91	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-22	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-25	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-26	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-39	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-40	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-93	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-94	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-1	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-3	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-5	QT,A,M

Equipment Description	Manufacturer	Component No.	Deficiency
Motor Operated Valve	Limitorque	FCV-63-6	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-7	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-8	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-11	QT,A,M
Motor Operated Valve	Limitorque	FCV-74-12	R,T,QT,P,H,A,M,QM,QI
Motor Operated Valve	Limitorque	FCV-74-24	R,T,QT,P,H,A,M,QM,QI
Motor Operated Valve	Limitorque	FCV-62-132	R,T,QT,P,H,A,M,QM,QI
Motor Operated Valve	Limitorque	FCV-62-133	R,T,QT,P,H,A,M,QM,QI
Motor Operated Valve	Limitorque	FCV-62-135	QT,A,M
Motor Operated Valve	Limitorque	FCV-62-136	QT,A,M
Motor Operated Valve	Limitorque	FCV-62-138	QT,A,M
@Motor Operated Valve	Limitorque	FCV-74-3	QT,A,M
@Motor Operated Valve	Limitorque	FCV-74-21	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-4	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-175	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-47	QT,A,M

Equipment Description	Manufacturer	Component No.	Deficiency
Motor Operated Valve	Limitorque	FCV-63-48	QT,A,M
*Motor Operated Valve	Limitorque	FCV-63-72	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-73	QT,A,M
Motor Operated Valve	Limitorque	FCV-62-61	QT,A,M
*Motor Operated Valve	Limitorque	FCV-63-67	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-80	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-98	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-118	QT,A,M
Motor Operated Valve	Limitorque	FCV-63-172	QT,A,M
Motor Operated Valve	Limitorque	FCV-1-15	T,A,QM,M,P,QT,QI
Motor Operated Valve	Limitorque	FCV-1-16	T,A,QM,M,P,QT,QI
Motor Operated Valve	Limitorque	FCV-1-17	T,A,QM,M,P,QT,QI
Motor Operated Valve	Limitorque	FCV-1-18	T,A,QM,M,P,QT,QI
Motor Operated Valve	Limitorque	FCV-70-89	A,M,H,CS,QT,T,P,QM
Motor Operated Valve	Limitorque	FCV-70-87	A,M,H,CS,QT,T,P,QM
Motor Operated Valve	Limitorque	FCV-70-183	A,M,QT,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Motor Operated Valve	Limitorque	FCV-70-90	A,M,QT,QI
Motor Operated Valve	Limitorque	FCV-70-133	A,M,QT,QI
Motor Operated Valve	Limitorque	FCV-70-134	A,M,QT,QI
Motor Operated Valve	Limitorque	FCV-62-138	R,T,QT,P,H,A,M,QM,QI
Motor Operated Valve	Limitorque	FCV-62-98	R,T,QT,P,H,A,M,QM,QI
Motor Operated Valve	Limitorque	FCV-62-99	R,T,QT,P,H,A,M,QM,QI
Motor Operated Valve	Limitorque	FCV-3-116A	A,M,QT
Motor Operated Valve	Limitorque	FCV-3-116B	A,M,QT
Motor Operated Valve	Limitorque	FCV-3-126A	A,M,QT
Motor Operated Valve	Limitorque	FCV-3-126B	A,M,QT
Motor Operated Valve	Limitorque	FCV-67-87	T,A,M,QM,CS,H
Motor Operated Valve	Limitorque	FCV-67-95	T,A,M,QM,CS,H
Motor Operated Valve	Limitorque	FCV-67-103	T,A,M,QM,CS,H
Motor Operated Valve	Limitorque	FCV-67-111	T,A,M,QM,CS,H
Motor Operated Valve	Limitorque	FCV-67-295	T,A,M,QM,CS,H
Motor Operated Valve	Limitorque	FCV-67-296	T,A,M,QM,CS,H

Equipment Description	Manufacturer	Component No.	Deficiency
Motor Operated Valve	Limitorque	FCV-67-297	T,A,M,QM,CS,H
Motor Operated Valve	Limitorque	FCV-67-298	T,A,M,QM,CS,H
Motor Operated Valve	Limitorque	FCV-72-13	A,M,QT
Motor Operated Valve	Limitorque	FCV-72-34	A,M,QT
Motor Operated Valve	Limitorque	FCV-3-33	T,A,M,QM
Motor Operated Valve	Limitorque	FCV-3-47	T,A,M,QM
Motor Operated Valve	Limitorque	FCV-3-87	T,A,M,QM
Motor Operated Valve	Limitorque	FCV-3-100	T,A,M,QM,P,QI
Motor Operated Valve	Limitorque	FCV-72-2	QM,R,A,M,QI
Motor Operated Valve	Limitorque	FCV-72-39	QM,R,A,M
Motor Operated Valve	Limitorque	FCV-72-20	QM,R,A,M
Motor Operated Valve	Limitorque	FCV-72-23	QM,R,A,M
Motor Operated Valve	Limitorque	FCV-72-21	QM,R,A,M
Motor Operated Valve	Limitorque	FCV-72-40	QM,R,A,M
Motor Operated Valve	Limitorque	FCV-72-41	QM,R,A,M
Motor Operated Valve	Limitorque	FCV-74-33	QT,A,M

Equipment Description	Manufacturer	Component No.	Deficiency
Motor Operated Valve	Limitorque	FCV-74-35	QT,A,M
Motor Operated Valve	Linkbelt	FCV-67-123	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-67-125	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-67-146	QM,A,M,QT
@*Motor Operated Valve	Linkbelt	FCV-67-151	QM,A,M,QT
@Motor Operated Valve	Linkbelt	FCV-67-152	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-67-127	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-67-128	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-67-147	QM,A,M,QT
@Motor Operated Valve	Linkbelt	FCV-67-205	QM,A,M,QT
@Motor Operated Valve	Linkbelt	FCV-67-208	QM,A,M,QT
@Motor Operated Valve	Linkbelt	FCV-67-233	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-67-81	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-67-82	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-67-126	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-67-124	QM,A,M,QT

Equipment Description	Manufacturer	Component No.	Deficiency
Motor Operated Valve	Linkbelt	FCV-70-2	QM,A,M,QT
*Motor Operated Valve	Linkbelt	FCV-70-3	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-70-4	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-70-8	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-70-9	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-70-10	QM,A,M,QT
@Motor Operated Valve	Linkbelt	FCV-70-11	QM,A,M,QT
@Motor Operated Valve	Linkbelt	FCV-70-12	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-70-13	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-70-14	QM,A,M
Motor Operated Valve	Linkbelt	FCV-70-15	QM,A,M
Motor Operated Valve	Linkbelt	FCV-70-16	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-70-18	QM,A,M
Motor Operated Valve	Linkbelt	FCV-70-22	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-70-23	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-70-25	QM,A,M,QT

Equipment Description	Manufacturer	Component No.	Deficiency
Motor Operated Valve	Linkbelt	FCV-70-26	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-70-27	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-70-28	QM,A,M
Motor Operated Valve	Linkbelt	FCV-70-29	QM,A,M
Motor Operated Valve	Linkbelt	FCV-70-34	QM,A,M,QT
Motor Operated Valve	Linkbelt	FCV-70-39	A,QM,M,QT
Motor Operated Valve	Linkbelt	FCV-70-40	A,QM,M
@Motor Operated Valve	Linkbelt	FCV-70-41	A,QM,M,QT
Motor Operated Valve	Linkbelt	FCV-70-64	A,QM,M,QT
Motor Operated Valve	Linkbelt	FCV-70-74	A,QM,M,QT
Motor Operated Valve	Linkbelt	FCV-70-75	A,QM,M
Motor Operated Valve	Linkbelt	FCV-70-76	A,QM,M
Motor Operated Valve	Linkbelt	FCV-70-78	A,QM,M
@Motor Operated Valve	Linkbelt	FCV-70-111	A,QM,M,QT
Motor Operated Valve	Linkbelt	FCV-70-153	A,QM,M,QT
Motor Operated Valve	Linkbelt	FCV-70-156	A,QM,M,QT

Equipment Description	Manufacturer	Component No.	Deficiency
Motor Operated Valve	Linkbelt	FCV-70-168	A,QM,M,QT
@Motor Operated Valve	Linkbelt	FCV-70-193	A,QM,M,QT
@Motor Operated Valve	Linkbelt	FCV-70-194	A,QM,M,QT
Motor Operated Valve	Linkbelt	FCV-70-195	A,QM,M,QT
Motor Operated Valve	Linkbelt	FCV-70-196	A,QM,M,QT
@Motor Operated Valve	Linkbelt	FCV-70-197	A,QM,M,QT
@Motor Operated Valve	Linkbelt	FCV-70-198	A,QM,M,QT
Motor Operated Valve	Linkbelt	FCV-70-92	A,QM,M,QT
Motor Operated Valve	Linkbelt	FCV-70-139	A,QM,M,QT
Motor Operated Valve	Linkbelt	FCV-70-140	A,QM,M,QT
Motor Operated Valve	Linkbelt	FCV-70-143	A,QM,M,QT
@*Flow Switch	Dwyer	FS-30-146	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-157	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-194	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-195	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-196	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-197	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-200	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-202	R,T,QT,P,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Flow Switch	Dwyer	FS-30-184	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-185	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-190	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-191	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-192	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-193	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-186	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-187	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-201	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-20-194	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Dwyer	FS-30-195	R,T,QT,P,H,A,M,QM,QI
@Pressure Differential Indication Switch	Dwyer	PDIS-30-148	R,T,QT,P,H,A,M,QM,QI
@Pressure Differential Indication Switch	Dwyer	PDIS-30-149	R,T,QT,P,H,A,M,QM,QI
@Pressure Switch	Custom Component	PS-32-62	R,T,QT,P,H,A,M,QM,QI
@Pressure Switch	Custom Component	PS-32-88	R,T,QT,P,H,A,M,QM,QI
@Pressure Switch	Custom Component	PS-32-82	R,T,QT,P,H,A,M,QM,QI
@Pressure Switch	Custom Component	PS-32-85	R,T,QT,P,H,A,M,QM,QI
@Pressure Switch	Custom Component	PS-70-209	R,T,QT,P,H,A,M,QM,QI
@Pressure Switch	Custom Component	PS-70-210	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-184	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-185	R,T,QT,P,H,A,M,QM,QI
@Temperature Switch	PENN	TS-30-190	R,T,QT,P,H,A,M,QM,QI
@Temperature Switch	PENN	TS-30-191	R,T,QT,P,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
@Temperature Switch	PENN	TS-30-192	R,T,QT,P,H,A,M,QM,QI
@Temperature Switch	PENN	TS-30-193	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-207	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-175	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-176	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-177	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-178	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-179	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-180	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-182	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-183	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-194	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-195	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-196	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-197	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-186	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-187	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-201	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	PENN	TS-30-202	R,T,QT,P,H,A,M,QM,QI
@Temperature Switch	Honeywell	TS-30-103A	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	Honeywell	TS-74-43	RPS
Temperature Switch	Honeywell	TS-74-44	RPS
Temperature Switch	Honeywell	TS-74-45	RPS
Temperature Switch	Honeywell	TS-74-46	RPS
@Temperature Switch	FENWAL	TS-30-103	R,T,QT,P,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Temperature Switch	FENWAL	TS-30-214	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	FENWAL	TSI-17A	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	FENWAL	TSI-17B	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	FENWAL	TSI-18A	R,T,QT,P,H,A,M,QM,QI
Temperature Switch	FENWAL	TSI-18B	R,T,QT,P,H,A,M,QM,QI
@*Transfer Switch	Electro-Switch	XS-46-57	QM,A
Flow Switch	Barton	FIS-67-206	R,T,QT,P,H,A,M,QM,QI
Flow Switch	Barton	FIS-67-209	R,T,QT,P,H,A,M,QM,QI
@Flow Switch	Barton	FIS-65-55A/B	R,T,QT,P,H,A,M,QM,QI
@Flow Switch	Barton	FIS-65-44E/F	R,T,QT,P,H,A,M,QM,QI
@Flow Switch	Barton	FIS-65-25A/B	R,T,QT,P,H,A,M,QM,QI
@Flow Switch	Barton	FIS-65-25C/D	R,T,QT,P,H,A,M,QM,QI
@Flow Switch	Barton	FIS-65-31A/B	R,T,QT,P,H,A,M,QM,QI
@Flow Switch	Barton	FIS-65-55C/D	R,T,QT,P,H,A,M,QM,QI
@Flow Switch	Barton	FIS-65-44A/B	R,T,QT,P,H,A,M,QM,QI
@Flow Switch	Barton	FIS-65-44C/D	R,T,QT,P,H,A,M,QM,QI
@Flow Switch	Barton	FIS-65-25E/F	R,T,QT,P,H,A,M,QM,QI
@Flow Switch	Barton	FIS-65-31C/D	R,T,QT,P,H,A,M,QM,QI
@Pressure Switch	Barton	PDIS-313-305	R,T,QT,P,H,A,M,QM,QI
@Pressure Switch	Barton	PDIS-313-340	R,T,QT,P,H,A,M,QM,QI
Modifier	ITT Conoflow	FM-30-148	R,T,QT,P,H,A,M,QM,QI
Modifier	Transmation	FM-30-148A	R,T,QT,P,H,A,M,QM,QI
Modifier	Transmation	FM-30-149	R,T,QT,P,H,A,M,QM,QI
Modifier	Transmation	FM-30-149A	R,T,QT,P,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
†Transmitter	Foxboro	PT-1-2B	A,R
†Transmitter	Foxboro	PT-1-27B	A,R
†Transmitter	Foxboro	PT-1-9A	R,T,QT,P,H,A,M,QM,QI
†Transmitter	Foxboro	PT-1-20A	R,T,QT,P,H,A,M,QM,QI
†Transmitter	Foxboro	PT-1-20B	R,T,QT,P,H,A,M,QM,QI
†*Transmitter	Foxboro	LT-3-148	A,QI,R
†Transmitter	Foxboro	LT-3-156	A,QI,R
†Transmitter	Foxboro	LT-3-164	A,QI,R
†Transmitter	Foxboro	LT-3-171	A,QI,R
†Transmitter	Foxboro	LT-3-173	A,QI,R
†Transmitter	Foxboro	LT-3-174	A,QI,R
†Transmitter	Foxboro	LT-3-175	A,QI,R
†Transmitter	Foxboro	LT-3-172	A,QI,R
Flow Transmitter	Bailey	FT-72-13	R,T,QT,P,H,A,M,QM,QI
Flow Transmitter	Bailey	FT-72-34	R,T,QT,P,H,A,M,QM,QI
Flow Transmitter	Bailey	FT-70-81A	R,T,QT,P,H,A,M,QM,QI
Flow Transmitter	Bailey	FT-70-81B	R,T,QT,P,H,A,M,QM,QI
Flow Transmitter	Bailey	FT-70-81D	R,T,QT,P,H,A,M,QM,QI
†Pressure Transmitter	Foxboro	PDT-65-80	R,T,QT,P,H,A,M,QM,QI
†Pressure Transmitter	Foxboro	PDT-65-82	R,T,QT,P,H,A,M,QM,QI
†Pressure Transmitter	Foxboro	PDT-65-90	R,T,QT,P,H,A,M,QM,QI
†Pressure Transmitter	Foxboro	PDT-65-97	R,T,QT,P,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Pressure Transmitter	Barton	PT-68-320	T,QT,A,M,QM
Pressure Transmitter	Barton	PT-68-335	T,QT,A,M,QM
Pressure Transmitter	Barton	PT-68-339	T,QT,A,M,QM
Pressure Transmitter	Barton	PT-68-66	T,QT,A,M,QM
Flow Transmitter	Barton	FT-1-3A&3B	A,M
Flow Transmitter	Barton	FT-1-10A&B	A,M
Flow Transmitter	Barton	FT-1-21A&B	A,M
Flow Transmitter	Barton	FT-1-28A&B	,M
Level Transmitter	Barton	LT-3-38	R,T,QT,P,H,A,M,QM,QI, CS
Level Transmitter	Barton	LT-3-39	R,T,QT,P,H,A,M,QM,QI, CS
Level Transmitter	Barton	LT-3-42	R,T,QT,P,H,A,M,QM,QI, CS
Level Transmitter	Barton	LT-3-51	R,T,QT,P,H,A,M,QM,QI, CS
Level Transmitter	Barton	LT-3-52	R,T,QT,P,H,A,M,QM,QI, CS
Level Transmitter	Barton	LT-3-93	T,QT,A,M,QM
Level Transmitter	Barton	LT-3-94	T,QT,A,M,QM
Level Transmitter	Barton	LT-3-111	T,QT,A,M,QM
Level Transmitter	Barton	LT-3-97	T,QT,A,M,QM
Level Transmitter	Barton	LT-3-106	T,QT,A,M,QM
Level Transmitter	Barton	LT-3-107	T,QT,A,M,QM
Level Transmitter	Barton	LT-3-110	T,QT,A,M,QM

Equipment Description	Manufacturer	Component No.	Deficiency
Level Transmitter	Barton	LT-3-111	R,T,QT,P,H,A,M,QM,QI CS
Radiation Monitor	General Atomic	RE-90-130	R,T,QT,P,H,A,M,QM,QI
Radiation Monitor	General Atomic	RE-90-131	R,T,QT,P,H,A,M,QM,QI
Radiation Monitor	General Atomic	RE-90-106D	R,T,QT,P,H,A,M,QM,QI
Radiation Monitor	General Atomic	RE-90-112D	R,T,QT,P,H,A,M,QM,QI
@Radiation Monitor	General Atomic	RE-90-102	R,T,QT,P,H,A,M,QM,QI
@Radiation Monitor	General Atomic	RE-90-103	R,T,QT,P,H,A,M,QM,QI
@Radiation Monitor	General Atomic	RE-90-106	R,T,QT,P,H,A,M,QM,QI
@Radiation Monitor	General Atomic	RE-90-112	R,T,QT,P,H,A,M,QM,QI
@Radiation Monitor	General Atomic	RE-90-140	R,T,QT,P,H,A,M,QM,QI
Radiation Monitor	General Atomic	RE-90-141	R,T,QT,P,H,A,M,QM,QI
H_2 Monitor	Comsip		R,T,QT,P,H,A,M,QM,QI
Auxiliary Dryers A&B Panel	Paul Trinity		R,T,QT,P,H,A,M,QM,QI
Control Panel L-326	Terry Turbine		R,T,QT,P,H,A,M,QM,QI
Auxiliary Control Air Compressor Panel (Instrument Rack)	Ingersoll-Rand		R,T,QT,P,H,A,M,QM,QI
Air Return Fan Motor	Reliance		R,T,QT,P,H,A,M,QM,QI, CS
Emergency Gas Treatment AHU Motor	Lincoln		R,T,QT,P,H,A,M,QM,QI
Spent Fuel Pit Pump AHU Motor	Lincoln		R,T,QT,P,H,A,M,QM,QI
RHR Pump Cooler Motor	Lincoln		R,T,QT,P,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
SIS Pump Cooler AHU Motor	Lincoln		R,T,QT,P,H,A,M,QM,QI
Cent. Charging Pump Cooler AHU Motor	Lincoln		R,T,QT,P,H,A,M,QM,QI
AFW & Boric acid Pump AHU Motor	Lincoln		R,T,QT,P,H,A,M,QM,QI
CCS Pump & AFW Pump AHU Motor	Lincoln		R,T,QT,P,H,A,M,QM,QI
Pipe Chase AHU Motor	Lincoln		R,T,QT,P,H,A,M,QM,QI
Containment Spray Pump AHU Motor	Westinghouse		R,T,QT,P,H,A,M,QM,QI
Penetration Room Coolers Motor	Lincoln		R,T,QT,P,H,A,M,QM,QI
Aux. Bldg. Gas Treatment Fan Motor	Reliance		R,T,QT,P,H,A,M,QM,QI
Emergency Gas Treatment Fan Motor	Reliance		R,T,QT,P,H,A,M,QM,QI
480-Volt Board Room AHU Motor	Westinghouse		R,T,QT,P,H,A,M,QM,QI
Component Cooling Water Pump Motor	Allis-Chalmers		RPN
Containment Spray Pump Motor	Lincoln		R,T,QT,P,H,A,M,QM,QI
AVC Circulation Pump	Lincoln		RPN
AVC Circulation Pump	Lincoln		RPN
Auxiliary Control Air Compressor Motor	General Electric		R,T,QT,P,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Pressurizer HTR Dist. PNLS 10, 1A-A, 1B-B, 1C, 2D, 2A-A, 2B-B, 2C	Powell		R,T,QT,P,H,A,M,QM,QI
RTD	Rosemount	TE-68-2A	T,QT,A,M,QM
RTD	Rosemount	TE-68-2B	T,QT,A,M,QM
RTD	Rosemount	TE-68-14	T,QT,A,M,QM
RTD	Rosemount	TE-68-25	T,QT,A,M,QM
RTD	Rosemount	TE-68-37	T,QT,P,H,A,M,QM
RTD	Rosemount	TE-68-44	T,QT,A,M,QM
RTD	Rosemount	TE-68-56	T,QT,P,H,A,M,QM
RTD	Rosemount	TE-68-67	T,QT,P,H,A,M,QM
RTD	Rosemount	TE-68-79	T,QT,A,M,QM
*RTD	Rosemount	TE-68-1	T,QT,A,M,QM
RTD	Rosemount	TE-68-13	T,QT,P,H,A,M,QM
RTD	Rosemount	TE-68-24	T,QT,P,H,A,M,QM
RTD	Rosemount	TE-68-41	T,QT,P,H,A,M,QM
RTD	Rosemount	TE-68-43	T,QT,P,H,A,M,QM
RTD	Rosemount	TE-68-60	T,QT,P,H,A,M,QM
RTD	Rosemount	TE-68-65	T,QT,P,H,A,M,QM
RTD	Rosemount	TE-68-83	T,QT,P,H,A,M,QM
Excore Neutron Detectors	WIGTD	NC-41	QT,P,H,A,M,QM
Excore Neutron Detectors	WIGTD	NC-42	QT,P,H,A,M,QM
Excore Neutron Detectors	WIGTD	NC-43	QT,P,H,A,M,QM

Equipment Description	Manufacturer	Component No.	Deficiency
Excore Neutron Detectors	WIGTD	NC-44	QT,P,H,A,M,QM
*Limit Swtiches	NAMCO		A,M,H
Cable	American Insulated Wire	SROAJ	A,M
Cable	Rockbestos	SROAJ	A,M
Cable	Rockbestos	SROAJ-H	
Cable	Anaconda-Continental	SROAJ	A,M
Cable	Anaconda-Continental	SROAJ-H	A,M
Cable	Anaconda-Continental	WVA	A,M
Cable	Anaconda-Continental	WVA(XLPE)	A,M
Cable	Rockbestos	WVA(XLPE)	A,M
Cable	ITT Suprenant	WVA(XLPE)	A,M
Cable	Brand-Rex	WVC(XLPE)	A,M
Cable	Rome Cable	Type CPJ	A,M,R
Cable	Plastic Wire & Cable	Type CPJ	A,M,R
Cable	Essex International	Type CPJ	A,M,R
Cable	Rome Cable	Type CPPJ	A,M,R
Cable	Plastic Wire & Cable	Type CPPJ	A,M,R
Cable	ESSEX International	Type CPPJ	A,M,R
Cable	Cyprus Wire & Cable	Type CPSJ	A,M,R

Equipment Description	Manufacturer	Component No.	Deficiency
Cable	General Cable	Type CPSJ	A,M,R
Cable	Phelps Dodge C&W	Type CPSJ	A,M,R
Cable	Plastic Wire & Cable	Type CPSJ	A,M,R
Cable	Anaconda	Type CPSJ	QT,A,M
Cable	Okonite	Type EPSJ	QT,A,M
Cable	American Insulated Wire	Type PXJ	A,M
Cable	General Electric	Type PXJ	A,M
Cable	American Insulated Wire	Type PXMJ	A,M
Cable	Essex	Type PXMJ	A,M
Cable	General Electric	Type PXMJ	A,M
Cable	Okonite	Type XLPE	A,M,R
*Cable	Belden	Type XLPE	A,M
*Cable	Brand-Rex	Type XLPE	A,M
Cable	Rockbestos	Type XLPE	A,M
Cable	Eaton Corp.	Type XLPE	A,M
Cable	Samuel Moore	Type XLPE	A,M
Cable	Anaconda-Continental	Type XLPE	A,M
Cable	ITT Suprenant	Type XLPE	A,M
Cable	Times Wire and Cable	Type XLPE	A,M
Cable	Boston Insulated Wire	Type XLPE	A,M
Cable	Anaconda Wire and Cable	ETFE	M,A

Equipment Description	Manufacturer	Component No.	Deficiency
Cable	Caroline Wire and Cable	ETFE	M,A
Cable	Teledyne Thermatics	ETFE	M,A
Cable	Times Wire & Cable	ETFE	M,A
Junction Boxes	NA	NA	H,P,QT,A,M,QM
Electrical Penetration Assemblies	Westinghouse		A,M,QM
Transducer	Robertshaw		R,H,QT,M,A,QM,QI
Transducer	Robertshaw		R,H,QT M,A,QM,QI
Terminal Blocks			QT,R,QM,A,M
Back Up Press Htr (XFMR, 1A-A, 1B-B, 2A-A, 2B-B)	Westinghouse		R,T,QT,P,H,A,M,QM,QI
Level Transmitter	Unknown	LT-63-177	CS,R,T,QT,RT,P,M,H,A, QM,QI
Level Transmitter	Unknown	LT-63-178	CS,R,T,QT,RT,P,M,H,A, QM,QI
Level Transmitter	Unknown	LT-63-179	CS,R,T,QT,RT,P,M,H,A, QM,QI
Motor Operated Valve	Limitorque	FCV-68-332	QT,A,M
Motor Operated valve	Limitorque	FCV-68-333	QT,A,M
Motor Operated Valve	Limitorque	FCV-74-1	CS,R,T,QT,RT,P,M,H,A, QM,QI
Motor Operated Valve	Limitorque	FCV-74-2	CS,R,T,QT,RT,P,M,H,A, QM,QI
Motor Operated Valve	Unknown	PCV-68-334	CS,R,T,QT,RT,P,M,H,A, QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Motor Operated Valve	Unknown	PCV-68-340A	CS,R,T,QT,RT,P,M,H,A, QM,QI
Solenoid Valve	Unknown	FSV-61-194	CS,R,T,QT,RT,P,M,H,A, QM,QI
Solenoid Valve	Unknown	FSV-61-192	CS,R,T,QT,RT,P,M,H,A, QM,QI
Solenoid Valve	Unknown	FSV-61-122	CS,R,T,QT,RT,P,M,H,A, QM,QI
Motor Operated Valve	Unknown	FCV-61-97	CS,R,T,QT,RT,P,M,H,A, QM,QI
Motor Operated Valve	Unknown	FCV-77-9	CS,R,T,QT,RT,P,M,H,A, QM,QI
@Level Switch	Mercoid	O-LS-313-340	R,T,QT,RT,P,H,A,M,QM, QI
@Level Switch	Unknown	O-LS-313-305	R,T,QT,RT,P,H,A,M,QM, QI
Modifier	Unknown	1-LM-3-164A	R,T,QT,RT,P,H,A,M,QM, QI
Modifier	Unknown	1-LM-3-171A	R,T,QT,RT,P,H,A,M,QM, QI
Solenoid Valve	Unknown	1-FSV-61-191A	R,T,QT,RT,P,H,A,M,QM, QI
Solenoid Valve	Unknown	1-LSV-62-118A	R,T,QT,RT,P,H,A,M,QM, QI
Limit Switch	Unknown	ZS ON1-PVC-65-86	R,T,QT,RT,P,H,A,M,QM, QI
Limit Switch	Unknown	ZS ON1-PVC-65-87	R,T,QT,RT,P,H,A,M,QM, QI
Motor Operated Valve	Linkbelt	FCV-70-1	R,T,QT,RT,P,H,A,M,QM, QI
@Solenoid Valve	ASCO	FSV-30-114	QT,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
@Solenoid Valve	ASCO	FSV-30-115	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-116	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-117	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-118	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-119	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-120	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-121	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-124	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-125	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-128	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-131	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-132	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-296	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-297	QT,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-129	H,A,QT,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-130	H,A,QT,M,QM,QI
Solenoid Valve	ASCO	FSV-30-106	H,A,QT,M,QM,QI
Solenoid Valve	ASCO	FSV-30-107	H,A,QT,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-122	H,A,QT,M,QM,QI
@Solenoid Valve	ASCO	FSV-30-123	H,A,QT,M,QM,QI
Limit Switch	NAMCO	EA 700	QT,T,P,H,A,R,M,QM,QI
Solenoid Valve	ASCO	FSV-30-137	RPS
Solenoid Valve	ASCO	FSV-30-138	RPS
Solenoid Valve	ASCO	FSV-30-140	RPS

Equipment Description	Manufacturer	Component No.	Deficiency
Solenoid Valve	ASCO	FSV-30-141	RPS
Solenoid Valve	ASCO	FSV-30-160	RPS
Solenoid Valve	ASCO	FSV-30-161	RPS
Solenoid Valve	ASCO	FSV-30-166	RPS
Solenoid Valve	ASCO	FSV-30-167	RPS
Solenoid Valve	ASCO	FSV-30-271	RPS
Solenoid Valve	ASCO	FSV-30-272	RPS
Motor Operated Valve	Limitorque	FCV-26-240	QT,A,M
Motor Operated Valve	Limitorque	FCV-26-241	QT,A,M
Motor Operated Valve	Limitorque	FCV-26-242	QT,A,M
Motor Operated Valve	Limitorque	FCV-26-243	QT,A,M
Solenoid Valve	AVCO	FSV-30-9	QT,T,P,H,A,R,M,QM,QI
Solenoid Valve	AVCO	FSV-30-14	QT,T,P,H,A,R,M,QM,QI
Solenoid Valve	AVCO	FSV-30-16	QT,T,P,H,A,R,M,QM,QI
Solenoid Valve	AVCO	FSV-30-19	QT,T,P,H,A,R,M,QM,QI
Solenoid Valve	AVCO	FSV-30-37	QT,T,P,H,A,R,M,QM,QI
Solenoid Valve	AVCO	FSV-30-53	QT,T,P,H,A,R,M,QM,QI
Solenoid Valve	AVCO	FSV-30-57	QT,T,P,H,A,R,M,QM,QI
Solenoid Valve	AVCO	FSV-30-59	QT,T,P,H,A,R,M,QM,QI
Solenoid Valve	ASCO	FSV-30-157B	QT,A,M
@Solenoid Valve	ASCO	FSV-30-13	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-18	QT,H,A,M,QM.QI
Solenoid Valve	ASCO	FSV-30-28	QT,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Solenoid Valve	ASCO	FSV-30-29	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-32	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-33	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-34	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-35	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-36	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-41	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-49	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-55	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-76	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-79	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-91	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-96	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-98	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-112	QT,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-30-113	QT,H,A,M,QM,QI
Pressure Controller	Johnson Controls	FC-30-148	QT,H,A,R,M,QM,QI
Pressure Controller	Johnson Controls	FC-30-149	QT,H,A,R,M,QM,QI
Limit Switch	NAMCO	EA-180	CS,A
Limit Switch	Micro Switch	P/N LSC4C	T,QT,P,H,A,R,M,QM,RPN
Limit Switch	NAMCO	SL 3C-B2	T,QT,P,H,A,R,M,QM,RPN
Limit Switch	NAMCO	EA-170	A,QT,QM
Solenoid Valve	Chicago Fluid Power	FSV 1-4 (A,B,D, E,F,G,H,J)	A,QT,M
Solenoid Valve	Chicago Fluid Power	FSV 1-29 (A,B,D, E,F,G,H,J)	A,QT,M

Equipment Description	Manufacturer	Component No.	Deficiency
Solenoid Valve	Chicago Fluid Power	FSV 1-11 (A,B,D, E,F,G,H,J)	A,QT,M
Solenoid Valve	ASCO	PSV 1-6A	QT,T,H,A,R,M,QM,QT
Solenoid Valve	ASCO	PSV 1-6B	QT,T,H,A,R,M,QM,QT
Solenoid Valve	ASCO	PSV 1-31A	QT,T,H,A,R,M,QM,QT
Solenoid Valve	ASCO	PSV 1-31B	QT,T,H,A,R,M,QM,QT
Solenoid Valve	ASCO	PSV 1-13A	QT,T,H,A,R,M,QM,QT
Solenoid Valve	ASCO	PSV 1-13B	QT,T,H,A,R,M,QM,QT
Solenoid Valve	ASCO	PSV 1-24A	QT,T,H,A,R,M,QM,QT
Solenoid Valve	ASCO	PSV 1-24B	QT,T,H,A,R,M,QM,QT
Motor Operated Valve	Limitorque	FCV-3-136A	QT,M,A
Motor Operated Valve	Limitorque	FCV-3-136B	QT,M,A
Motor Operated Valve	Limitorque	FCV-3-179A	QT,M,A
Motor Operated Valve	Limitorque	FCV-3-179B	QT,M,A
Solenoid Valve	ASCO	LSV-3-148A	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	LSV-3-156A	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	LSV-3-164A	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	LSV-3-171A	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-77-128	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	LSV-3-148	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	LSV-3-156	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	LSV-3-164	QT,T,H,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Solenoid Valve	ASCO	LSV-3-171	QT,T,H,A,M,QM,QI
@Solenoid Valve	ASCO	LSV-3-172	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	LSV-3-173	QT,T,H,A,M,QM,QI
@Solenoid Valve	ASCO	FSV-77-241	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-1-7	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-1-14	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-1-25	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-1-32	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-1-147	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-1-150	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-1-148	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-1-149	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-90-107	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-90-111	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-90-113	QT,T,H,A,M,QM,QI
Solenoid Valve	ASCO	FSV-90-117	QT,T,H,A,M,QM,QI
Transducer	Masoneilan	LM-3-156A	QT,H,A,R,M,QM,QI
@Solenoid Valve	ASCO	FSV-12-79	QT,QM,H,A
Solenoid Valve	VALCOR	FSV-30-46A	CS,A,QT,M
Solenoid Valve	VALCOR	FSV-30-48A	CS,A,QT,M
Electro-Hydraulic Valve Operator	MEA	PM-3-122	QT,T,H,A,R,M,QM,QI
Electro-Hydraulic Valve Operator	MEA	PM-3-132	QT,T,H,A,R,M,QM,QI
Transmitter	Bailey	PT-3-132A	QT,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Pressure Switch	Barton	PS-30-46A	QT,M,QM,QI,A,H
Pressure Switch	Barton	PS-30-46B	QT,M,QM,QI,A,H
Pressure Switch	Barton	PS-30-47A	QT,M,QM,QI,A,H
Pressure Switch	Barton	PS-30-47B	QT,M,QM,QI,A,H
Pressure Switch	Barton	PS-30-48A	QT,M,QM,QI,A,H
Pressure Switch	Barton	PS-30-48B	QT,M,QM,QI,A,H
Solenoid Valve	ASCO	FSV-67-342	QT,M,QM,QI,A,H
Solenoid Valve	ASCO	FSV-70-85	QT,M,QM,QI,A,H
Pressure Differential Indicating Switch	Barton	PDIS-1-17	QT,QM,QI,H,A,R,M
Pressure Differential Indicating Switch	Barton	PDIS-1-18	QT,QM,QI,H,A,R,M
Pressure Switch	Custom Component	PS-3-138A	QT,T,H,A,R,M,QM,QI
Pressure Switch	Custom Component	PS-3-138B	QT,T,H,A,R,M,QM,QI
Pressure Switch	Custom Component	PS-3-148	QT,T,H,A,R,M,QM,QI
Pressure Switch	Custom Component	PS-3-156	QT,T,H,A,R,M,QM,QI
Pressure Switch	Custom Component	PS-3-164	QT,T,H,A,R,M,QM,QI
Pressure Switch	Custom Component	PS-3-171	QT,T,H,A,R,M,QM,QI
Transmitter	Bailey	FT-3-142	QT,T,H,A,R,M,QM,QI
@Radiation Monitor	General Atomic	RE-90-133	H,M,QT,QM,QI,A,R
@Radiation Monitor	General Atomic	RE-90-134	H,M,QT,QM,QI,A,R
Differential Pressure Switch	Barton	FIS-70-81	H,R,QT,A,QM,QI,M
Pressure Switch	Custom Component	PS-3-140A	H,QT,R,A,M,QM,QI
Pressure Switch	Custom Component	PS-3-150A	H,QT,R,A,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Pressure Switch	Custom Component	PS-3-139A	H,QT,R,A,M,QM,QI
Pressure Switch	Custom Component	PS-3-139B	H,QT,R,A,M,QM,QI
Pressure Switch	Custom Component	PS-3-139D	H,QT,R,A,M,QM,QI
Pressure Switch	Custom Component	PS-3-144A	H,QT,R,A,M,QM,QI
Pressure Switch	Custom Component	PS-3-144B	H,QT,R,A,M,QM,QI
Pressure Switch	Custom Component	PS-3-144D	H,QT,R,A,M,QM,QI
Pressure Switch	Custom Component	PS-3-140B	H,QT,R,A,M,QM,QI
Pressure Switch	Custom Component	PS-3-150B	H,QT,R,A,M,QM,QI
@Temperature Switch	Fenwal	TS12-91A	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-91B	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-92A	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-92B	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-93A	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-93B	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-94A	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-94B	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-95A	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-95B	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-96A	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-96B	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-97A	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-97B	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-98A	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-98B	QT,H,A,R,M,QM,QI
@Temperature Switch	Fenwal	TS12-99A	QT,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
@Temperature Switch	Fenwal	TS12-99B	QT,H,A,R,M,QM,QI
Motor Operated Valve	Limitorque	FCV-67-130	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-131	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-133	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-134	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-138	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-139	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-141	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-142	QT,A,M
@Motor Operated Valve	Linkbelt	FCV-70-206	QT,T,P,A,M,QM,QI
@Motor Operated Valve	Linkbelt	FCV-70-207	QT,T,P,A,M,QM,QI
@Motor Operated Valve	Linkbelt	FCV-70-208	QT,T,P,A,M,QM,QI
Motor Operated Valve	Limitorque	FCV-72-22	QT,A,R,M,QM,QI
Solenoid Valve	ASCO	FSV-313-222	RPS
Solenoid Valve	ASCO	FSV-313-229	RPS
Solenoid Valve	ASCO	FSV-313-231	RPS
Limit Switch	Micro Switch	OP-AR	QT,T,P,H,A,R,M,QM,QI
Solenoid Valve	ASCO	FSV-87-8	QT,T,P,H,A,R,M,QM,CS
Solenoid Valve	ASCO	FSV-68-307	QT,T,P,H,A,R,M,QM

Equipment Description	Manufacturer	Component No.	Deficiency
Transmitter	Foxboro	PDT-30-44	QT,T,P,H,A,R,M,QM
Transmitter	Foxboro	PDT-30-45	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	PSV-68-334	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	PSV-68-340AA	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	PSV-68-340AB	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	FSV-30-86	QT,T,P,H,A,R,M,QM
Motor Operated Valve	Limitorque	FCV-74-33	QT,T,P,H,A,R,M,QM
Motor Operated Valve	Limitorque	FCV-74-35	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	FSV-61-193A	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	FSV-61-96	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	FSV-61-110	QT,T,P,H,A,R,M,QM
Transmitter	Foxboro	PT-1-12	QT,T,P,H,A,R,M,QM
Transmitter	Foxboro	PT-1-23	QT,T,P,H,A,R,M,QM
Switch	Foxboro	FIS-74-12	QT,T,P,H,A,R,M,QM
Switch	Foxboro	FIS-74-24	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	LSV-3-175	QT,T,P,H,A,R,M,QM
Motor Operated Valve	Limitorque	LCV-3-148	QT,T,P,H,A,R,M,QM
*†Transmitter	Foxboro	FT-3-35A	QT,T,P,H,A,R,M,QM
*†Transmitter	Foxboro	FT-3-35B	QT,T,P,H,A,R,M,QM
*†Transmitter	Foxboro	FT-3-48A	QT,T,P,H,A,R,M,QM
*†Transmitter	Foxboro	FT-3-48B	QT,T,P,H,A,R,M,QM
*†Transmitter	Foxboro	FT-3-90A	QT,T,P,H,A,R,M,QM
*†Transmitter	Foxboro	FT-3-90B	QT,T,P,H,A,R,M,QM

Equipment Description	Manufacturer	Component No.	Deficiency
*†Transmitter	Foxboro	FT-3-103A	QT,T,P,H,A,R,M,QM
*†Transmitter	Foxboro	FT-3-103B	QT,T,P,H,A,R,M,QM
@Motor Operated Valve	Limitorque	LCV-62-132	QT,T,P,H,A,R,M,QM
@Motor Operated Valve	Limitorque	LCV-62-133	QT,T,P,H,A,R,M,QM
@Motor Operated Valve	Limitorque	FCV-87-22	QT,T,P,H,A,R,M,QM
@Motor Operated Valve	Limitorque	FCV-87-23	QT,T,P,H,A,R,M,QM
@Motor Operated Valve	Limitorque	FCV-87-24	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	FSV-87-9	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	FSV-87-10	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	FSV-63-23	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	FSV-63-64	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	FSV-68-305	QT,T,P,H,A,R,M,QM
Transmitter	Bailey	FT-70-81E	QT,T,P,H,A,R,M,QM
Motor Operated Valve	Limitorque	FCV-62-63	QT,T,P,H,A,R,M,QM,QI
†Transmitter	Foxboro	PT-1-2A	QT,T,P,H,A,R,M,QM
†Transmitter	Foxboro	PT-1-27A	QT,T,P,H,A,R,M,QM
†Transmitter	Foxboro	PT-1-5	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	FSV-30-87	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	LSV-3-174	QT,T,P,H,A,R,M,QM
Solenoid Valve	Chicago Fluid Power	FSV-1-22(A,B, D,E,F,G,H,J)	QT,T,P,H,A,R,M,QM
Switch	Barton	FIS-74-12	QT,T,P,H,A,R,M,QM

Equipment Description	Manufacturer	Component No.	Deficiency
Switch	Barton	FIS-74-24	QT,T,P,H,A,R,M,QM
Motor Operated Valve	Limitorque	FCV-76-206	QT,T,P,H,A,R,M,QM,QI
†Transmitter	Foxboro	FT-3-35A	QT,T,P,H,A,R,M,QM,QI
†Transmitter	Foxboro	FT-3-35B	QT,T,P,H,A,R,M,QM,QI
†Transmitter	Foxboro	FT-3-48A	QT,T,P,H,A,R,M,QM,QI
†Transmitter	Foxboro	FT-3-90A	QT,T,P,H,A,R,M,QM,QI
†Transmitter	Foxboro	FT-3-90B	QT,T,P,H,A,R,M,QM,QI
†Transmitter	Foxboro	FT-3-103A	QT,T,P,H,A,R,M,QM,QI
†Transmitter	Foxboro	FT-3-103B	QT,T,P,H,A,R,M,QM,QI
Motor Operator Valve	Limitorque	LCV-62-135	QT,T,P,H,A,R,M,QM
Motor Operator Valve	Limitorque	LCV-62-136	QT,T,P,H,A,R,M,QM
Motor Operator Valve	Limitorque	FCV-26-244	QT,T,P,H,A,R,M,QM
Motor Operator Valve	Limitorque	FCV-26-245	QT,T,P,H,A,R,M,QM
Solenoid Valve	ASCO	FSV-1-181	QT,T,P,H,A,R,M,CS,QM,QI
Solenoid Valve	ASCO	FSV-1-182	QT,T,P,H,A,R,M,CS,QM,QI
Solenoid Valve	ASCO	FSV-1-183	QT,T,P,H,A,R,M,CS,QM,QI
Solenoid Valve	ASCO	FSV-1-184	QT,T,P,H,A,R,M,CS,QM,QI
Solenoid Valve	ASCO	FSV-77-127	QT,T,P,H,A,R,M,CS,QM,QI
Solenoid Valve	ASCO	FSV-90-108	QT,T,P,H,A,R,M,CS,QM,QI
Solenoid Valve	ASCO	FSV-90-109	QT,T,P,H,A,R,M,CS,QM,QI
Solenoid Valve	ASCO	FSV-90-110	QT,T,P,H,A,R,M,CS,QM,QI
Solenoid Valve	ASCO	FSV-90-114	QT,T,P,H,A,R,M,CS,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Solenoid Valve	ASCO	FSV-90-115	QT,T,P,H,A,R,M,CS,QM,QI
Solenoid Valve	ASCO	FSV-90-116	QT,T,P,H,A,R,M,CS,QM,QI
Solenoid Valve	ASCO	FSV-30-298	QT,T,P,H,A,R,M,CS,QM,QI
Solenoid Valve	ASCO	FSV-30-299	QT,T,P,H,A,R,M,CS,QM,QI
@Solenoid Valve	ASCO	FSV-30-3	QT,T,P,H,A,R,M,CS,QM,QI
@Solenoid Valve	ASCO	FSV-30-6	QT,T,P,H,A,R,M,CS,QM,QI
@Solenoid Valve	ASCO	FSV-30-60	QT,T,P,H,A,R,M,CS,QM,QI
@Solenoid Valve	ASCO	FSV-30-69	QT,T,P,H,A,R,M,CS,QM,QI
@Solenoid Valve	ASCO	FSV-30-146A	QT,T,P,H,A,R,M,CS,QM,QI
@Solenoid Valve	ASCO	FSV-30-146B	QT,T,P,H,A,R,M,CS,QM,QI
$Temperature Switch	Penn	TS-30-187	QT,P,H,A,R,M,T,QM,QI
$Temperature Switch	Penn	TS-30-200	QT,P,H,A,R,M,T,QM,QI
$Temperature Switch	Penn	TS-30-207	QT,P,H,A,R,M,T,QM,QI
$Temperature Switch	Penn	TS-30-186	QT,P,H,A,R,M,T,QM,QI
$Temperature Switch	Fenwal	TS-30-104	QT,T,P,H,A,R,M,QM,QI
$Solenoid Valve	ASCO	FSV-67-217	QT,T,P,H,A,R,M,QM,QI
$Solenoid Valve	ASCO	FSV-67-219	QT,T,P,H,A,R,M,QM,QI
$Solenoid Valve	ASCO	FSV-67-336	QT,T,P,H,A,R,M,QM,QI
$Solenoid Valve	ASCO	FSV-67-338	QT,T,P,H,A,R,M,QM,QI
$Flow Switch	Dwyer	FS-30-157	QT,T,P,H,A,R,M,QM,QI
$Flow Switch	Dwyer	FS-30-200	QT,T,P,H,A,R,M,QM,QI
$Flow Switch	Dwyer	FS-30-207	QT,T,P,H,A,R,M,QM,QI
$Temperature Switch	Honeywell	TS-30-104A	QT,T,P,H,A,R,M,QM
$Cable	Brand-Rex	WVA(XLPE)	A,M

Equipment Description	Manufacturer	Component No.	Deficiency
$Cable	Samuel Moore	WVA(XLPE)	A,M
$Cable	Continental Wire & Cable	WVC(FREP)	A,M
$Handswitch	Cutler Hammer	2-HS-15B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-200	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-207	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-1-15B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-1-16B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-1-17B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-1-18B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-3-33B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-3-100B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-3-47B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-3-87B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-70-14B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-70-16B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-70-18B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-70-28B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-70-29B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-70-76B	QT,T,P,H,A,R,M.QM,QI
$Handswitch	Cutler Hammer	2-HS-70-78B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-70-15B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-70-195B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-30-157B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-32-81A	QT,T,P,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
$Handswitch	Cutler Hammer	2-HS-32-103A	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-32-103B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-32-111A	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-32-111B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-30-196	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-30-138B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-30-187	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-72-40B	QT,T,P,H,A,R,M,QM,QI
$Handswitch	Cutler Hammer	2-HS-72-41B	QT,T,P,H,A,R,M,QM,QI
Solenoid Valve	ASCO	FSV-30-102	QT,P,H,A,R,M,T,QM,QI
Solenoid Valve	ASCO	FSV-30-109	QT,P,H,A,T,R,M,QM,RPS
Motor Operated Valve	Limitorque	FCV-63-172	QT,A,M
$Transmitter	Barton	LT-3-38	A,M
$Transmitter	Barton	LT-3-39	A,M
$Transmitter	Barton	LT-3-42	A,M
$Transmitter	Barton	LT-3-51	A,M
$Transmitter	Barton	LT-3-52	A,M
$Transmitter	Barton	LT-3-55	A,M
$Motor Operated Valve	Limitorque	FCV-63-157	QT,T,P,H,A,R,M,QM,QI
$Motor Operated Valve	Limitorque	FCV-74-3	QT,T,P,H,A,R,M,QM,QI
$Solenoid Valve	ASCO	FSV-62-143	QT,T,P,H,A,M,QM
$Solenoid Valve	ASCO	FSV-62-128	QT,T,P,H,A,R,M,QM,QI
$Solenoid Valve	ASCO	FSV-77-20	QT,T,P,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
$Solenoid Valve	ASCO	FSV-62-144	QT,T,P,H,A,R,M,QM,QI
$Solenoid Valve	Limitorque	FCV-63-175	QT,T,P,H,A,R,M,QM,QI
$Transmitter	Barton	LT-63-176	QT,A,M
$Transmitter	Barton	LT-63-177	QT,A,M
$Transmitter	Barton	LT-63-178	QT,A,M
$Transmitter	Barton	LT-63-179	QT,A,M
$Transmitter	Barton	PT-68-69	QT,A,M
$Solenoid Valve	ASCO	FSV-87-11	QT,A,M,QM
$†Transmitter	Foxboro	FT-1-3A	QT,T,P,H,A,R,M,QM
$†Transmitter	Foxboro	FT-1-3B	QT,T,P,H,A,R,M,QM
$†Transmitter	Foxboro	FT-1-21A	QT,T,P,H,A,R,M,QM
$†Transmitter	Foxboro	FT-1-21B	QT,T,P,H,A,R,M,QM
$†Transmitter	Foxboro	FT-1-28A	QT,T,P,H,A,R,M,QM
$†Transmitter	Foxboro	FT-1-28B	QT,T,P,H,A,R,M,QM
$†Transmitter	Foxboro	FT-3-38	QT,T,P,H,A,R,M,QM,QI
$†Transmitter	Foxboro	FT-3-51	QT,T,P,H,A,R,M,QM,QI
$†Transmitter	Foxboro	FT-3-107	QT,T,P,H,A,R,M,QM,QI
$†Transmitter	Foxboro	FT-3-55	QT,T,P,H,A,R,M,QM,QI
$Solenoid Valve	ASCO	FSV-63-38	QT,T,P,A,M,QM
$Solenoid Valve	ASCO	FSV-77-20	QT,T,P,A,M,QM
@Solenoid Valve	ASCO	FSV-65-52	QT,A,M
@Solenoid Valve	ASCO	FSV-65-53	QT,A,M
@Solenoid Valve	ASCO	FSV-65-30	QT,A,M
@Solenoid Valve	ASCO	FSV-65-26	QT,A,M
@Solenoid Valve	ASCO	FSV-65-27	QT,A,M

Equipment Description	Manufacturer	Component No.	Deficiency
Solenoid Valve	ASCO	FSV-65-4	RPS
Solenoid Valve	ASCO	FSV-65-5	RPS
@Solenoid Valve	ASCO	FSV-65-24	RPS
@Solenoid Valve	ASCO	FSV-65-43	RPS
@Solenoid Valve	ASCO	FSV-65-9	RPS
@Solenoid Valve	ASCO	FSV-65-29	RPS
@Solenoid Valve	ASCO	FSV-65-45	RPS
@Solenoid Valve	ASCO	FSV-65-46	RPS
Handswitch	Cutler-Hammer	HS-62-61B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-67B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-80B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-98B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-118B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-172B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-332B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-333B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-32-80A	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-32-80B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-32-110A	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-32-110B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-83B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-88B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-91B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-96B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-99B	QT,T,P,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Handswitch	Cutler-Hammer	HS-67-104B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-107B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-112B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-130B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-131B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-133B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-134B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-138B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-139B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-141B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-67-142B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-43-2	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-43-11	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-43-22	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-43-34	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-43-75	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-32	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-33	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-34	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-35	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-121	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-124	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-125	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-128	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-131	QT,T,P,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Handswitch	Cutler-Hammer	1-HS-30-132	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-296	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-297	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-298	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-299	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-65-23B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-65-42B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-60	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-69	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-177	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-178	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-179	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-180	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-182	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-183	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-62-104B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-62-108B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-63-4B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-63-10B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-63-15B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-63-47B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-175B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-72-10B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-72-27B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-3-136A/B	QT,T,P,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Handswitch	Cutler-Hammer	HS-3-136B/B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-30-214	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-46-54B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-46-54D	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-46-55B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-46-56B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-3-179B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-3-179A	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-30-175	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-30-176	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-74-3B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-74-10B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-74-20B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-74-21B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	O-HS-70-111B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	O-HS-78-20	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-75B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-168A	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-1-11B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-1-22B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-1-22D	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-74-33B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-74-35B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-43-2	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-43-2A	QT,T,P,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Handswitch	Cutler-Hammer	1-HS-43-11	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-43-12	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-43-22	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-43-23	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-43-34	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-43-35	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-43-75	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-43-77	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-153B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-183B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-30-190	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-30-191	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-338	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-33B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-34B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-38B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-39B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-46B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-59B	QT,T,P,H,A,R,M,QM,QI
Hardswitch	Cutler-Hammer	1-HS-3-116A/B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-3-116B/B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-3-118B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-3-126A/B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-3-126B/B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-3-128B	QT,T,P,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Handswitch	Cutler-Hammer	1-HS-70-13B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-[illegible]B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-23B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-25B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-26B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-27B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-57B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-64B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-74B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-156B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-13	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-18	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-76	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-79	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-91	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-96	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-115	QT,T,P,[illegible],R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-116	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-117	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-118	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-119	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-120	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-30-192	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-30-193	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-31C-303B	QT,T,P,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Handswitch	Cutler-Hammer	0-HS-31C-338B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-67-151B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-67-152B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-67-478B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-1B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-11B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-12B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-40B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-41B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-193B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-194B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-197B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-198B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-70-208	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-67-123B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-67-127B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-67-128B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-67-146B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-67-147B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-67-233B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-67-424B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-2B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-3B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-4B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-8B	QT,T,P,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Handswitch	Cutler-Hammer	1-HS-70-9B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-10B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-130	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-131B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-207B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-31C-323	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-31C-332	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-31C-358	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-31C-367B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-31C-383B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-31C-384B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-31C-391B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	0-HS-31C-392B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-36	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-41	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-49	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-55	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-98	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-112	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-113	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-114	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-29	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-146B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-32-80A	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-32-80B	QT,T,P,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Handswitch	Cutler-Hammer	1-HS-32-102A	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-32-102B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-32-110B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-65-80	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-65-82	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-65-90	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-65-97	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-133B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-133C	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-70-134B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-72-2B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-28	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-194	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	1-HS-30-195	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-26-240	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-62-63B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-62-90B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-62-91B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-62-98	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-62-99	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-1B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-3B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-5B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-6B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-7B	QT,T,P,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Handswitch	Cutler-Hammer	HS-63-8B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-11B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-22B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-25B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-26B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-36	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-37	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-39B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-40B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-93B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-94B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-152B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-153B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-156B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-63-157B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-70-90B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-70-92B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-70-139B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-70-140B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-70-143B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-72-13B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-72-21B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-72-34B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-72-24B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-74-24B	QT,T,P,H,A,R,M,QM,QI

Equipment Description	Manufacturer	Component No.	Deficiency
Handswitch	Cutler-Hammer	HS-74-12B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-72-20B	QT,T ',H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-72-22B	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-26-242	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-26-245	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-43-2	QT,T,P,H,A,R,M,QM QI
Handswitch	Cutler-Hammer	HS-43-11	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-43-22	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-43-34	QT,T,P,H,A,R,M,QM,QI
Handswitch	Cutler-Hammer	HS-43-75	QT,T,P,H,A,R,M,QM,QI
Solenoid Valve	ASCO	FSV-30-275	RPS
Solenoid Valve	ASCO	FSV-30-276	RPS
Limit Switch	NAMCO	EA-170	QT,A,M
Solenoid Valve	AVCO	FSV-65-7	QT,T,P,H,A,R,M QM,QT
@Solenoid Valve	AVCO	FSV-65-8	QT,T,P,H,A,R,M,QM,QT
@Solenoid Valve	AVCO	FSV-65-28A	QT,T,P,H,A,R,M,QM,QT
@Solenoid Valve	AVCO	FSV-65-28B	QT,T,P,H,A,R,M,QM,QT
@Solenoid Valve	AVCO	FSV-65-47A	QT,T,P,H,A,R,M,QM,QT
@Solenoid Valve	AVCO	FSV-65-47B	QT,T,P,H,A,R,M,QM,QT
@Solenoid Valve	AVCO	FSV-65-50	QT,T,P,H,A,R,M,QM,QT
@Solenoid Valve	AVCO	FSV-65-51	QT,T,P,H,A,R,M,QM,QT
@Solenoid Valve	ASCO	FSV-65-10	RPS
Limit Switch	NAMCO	EA-700	QT,T,P,H,A,R,M,QM,QI
Motor Operated Valve	Limitorque	FCV-67-83	QT,A,M

Equipment Description	Manufacturer	Component No.	Deficiency
Motor Operated Valve	Limitorque	FCV-67-88	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-91	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-96	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-99	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-104	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-107	QT,A,M
Motor Operated Valve	Limitorque	FCV-67-112	QT,A,M
@Motor Operated Valve	Limitorque	FCV-67-424	M,A
@Solenoid Valve	Asco	FSV-65-52	A,QT,A,M
@Solenoid Valve	Asco	FSV-65-53	A,QT,A,M
@Solenoid Valve	Asco	FSV-65-30	A,QT,A,M
@Solenoid Valve	Asco	FSV-65-26	A,QT,A,M
@Solenoid Valve	Asco	FSV-65-27	A,QT,A,M
Solenoid Valve	Asco	FSV-65-4	RPS
Solenoid Valve	Asco	FSV-65-5	RPS
@Solenoid Valve	Asco	FSV-65-24	RPS
@Solenoid Valve	Asco	FSV-65-43	RPS
@Solenoid Valve	Asco	FSV-65-9	RPS
@Solenoid Valve	Asco	FSV-65-29	RPS
@Solenoid Valve	Asco	FSV-65-45	RPS
@Solenoid Valve	Asco	FSV-65-46	RPS
@Motor Operated Valve	Limitorque	FCV-87-22	QT,T,P,H,A,R,M, QM,QI

APPENDIX C

Equipment Considered Acceptable or Conditionally Acceptable
(Category 4.3)

LEGEND:
Designation for Deficiency

R - Radiation
T - Temperature
QT - Qualification Time
RT - Required Time
P - Pressure
H - Humidity
CS - Chemical spray
A - Material aging evaluation, replacement schedule, ongoing equipment surveillance
S - Submergence
M - Margin
I - HELB evaluation outside containment not completed
QM - Qualification method
RPN - Equipment relocation or replacement, adequate schedule not provided
EXN - Exempted equipment justification inadequate
SEN - Separate effects qualification justification inadequate
QI - Qualification information being developed
RPS - Equipment relocation or replacement schedule provided

Equipment Description	Manufacturer	Component No.	Deficiency
Solenoid Valve	Asco	FSV-43-201	A
Solenoid Valve	Asco	FSV-43-202	A
Solenoid Valve	Asco	FSV-43-207	A
Solenoid Valve	Asco	FSV-43-208	A
Solenoid Valve	Asco	FSV-43-2	A
Solenoid Valve	Asco	FSV-43-22	A
*Solenoid Valve	Asco	FSV-43-34	A
Solenoid Valve	Asco	FSV-43-75	A
Solenoid Valve	Asco	FSV-43-77	A

@Items unique to Unit 1 or shared by Units 1 and 2.
$Items unique to Unit 2.

Equipment Description	Manufacturer	Component No.	Deficiency
Solenoid Valve	Asco	FSV-43-3	A
Solenoid Valve	Asco	FSV-43-12	A
Solenoid Valve	Asco	FSV-43-33	A
Solenoid Valve	Asco	FSV-43-35	A
Solenoid Valve	Asco	FSV-43-11	A
Solenoid Valve	Asco	FSV-77-19	A
@Solenoid Valve	Asco	FSV-77-20	A
*Solenoid Valve	Target Rock	FSV-30-134	A
*Heat Shrink Splices	Raychem		A
Solenoid Valve	Asco	PSV-65-81	A
Solenoid Valve	Asco	PSV-65-83	A
@Solenoid Valve	Asco	FSV-32-80A	A
@Solenoid Valve	Asco	FSV-32-80B	A
Solenoid Valve	Asco	FSV-32-102A	A
Solenoid Valve	Asco	FSV-32-102B	A
@Solenoid Valve	Asco	FSV-32-110A	A
@Solenoid Valve	Asco	FSV-32-110B	A
@Solenoid Valve	Asco	LSV-3-175	A
Solenoid Valve	Asco	LSV-3-174	A
Solenoid Valve	Asco	FSV-77-17	A
Solenoid Valve	Asco	FSV-77-10	A

*NOTE: Items for which supporting environmental qualification documentation was audited by NRR

Equipment Description	Manufacturer	Component No.	Deficiency
Solenoid Valve	Asco	FSV-32-23	A
Solenoid Valve	Asco	FSV-65-19	A
Solenoid Valve	Asco	FSV-65-20	A
$Solenoid Valve	Asco	FSV-32-81A	A
$Solenoid Valve	Asco	FSV-32-81B	A
$Solenoid Valve	Asco	FSV-32-103A	A
$Solenoid Valve	Asco	FSV-32-111A	A
$Solenoid Valve	Asco	FSV-32-111B	A
Solenoid Valve	Asco	FSV-68-308	A
Solenoid Valve	Asco	FSV-87-7	A
Solenoid Valve	Asco	FSV-77-16	A
Solenoid Valve	Asco	FSV-77-18	A
Pressure Transmitter	Barton	PT-68-322	A
Pressure Transmitter	Barton	PT-68-323	A
Pressure Transmitter	Barton	PT-68-334	A
Pressure Transmitter	Barton	PT-68-340	A

APPENDIX D

Safety-Related Systems List[1]

Function	System
Emergency Reactor Shutdown	Reactor Protection System
	Chemical and Volume Control System
	Reactor Coolant System
Containment Isolation	Containment Isolation
	Main Steam
	Main Feedwater
	Auxiliary Feedwater
	Chemical and Volume Control
	Safety Injection
	Residual Heat Removal
	Containment Spray
	Component Cooling
Reactor Core Cooling	Safety Injection
	Upper Head Injection
	Residual Heat Removal
Containment Heat Removal	Ice Condenser
	Containment Spray
	Primary Containment Cooling
	Residual Heat Removal

[1] The NRC staff recognized that there are differences in nomenclature of systems because of plant vintage and engineering design; consequently some systems performing identical or similar functions may have different names. In those instances it was necessary to verify the system(s) function with the responsible IE regional reviewer and/or the licensee.

Function	System
Core Residual Heat Removal	Residual Heat Removal
	Main Feedwater
	Auxiliary Feedwater
	Component Cooling
	Essential Raw Water Cooling
	Steam Dump
Prevention of Significant Release of Radioactive Material	Emergency Gas Treatment
	Hydrogen Recombiners
	Radiation Monitoring
	Neutron Monitoring
	Ice Condenser
Supporting Systems	Fuel Oil, Diesel Starting Air, Standby Diesel Generator System
	Diesel Generator Backed AC Power, Vital 125V DC Power, Emergency Lighting
	Ventilation, Air Conditioning, Central Air
	High Pressure Fire Protection CO_2 Storage, Fire Protection, Purging
	Spent Fuel Pit Cooling
	Flood Mode Boration

ATTACHMENT 1

The Foxboro Company

Foxboro, MA 02035 U.S.A.
(617) 543-8750

12 March 1981

Subject: Potential Deficiency Affecting Foxboro Transmitters, Model Numbers N-E11, N-E13 or E11, E13 with suffix Codes /MCA, /MCA/RRW, or /MCA/RR

Gentlemen:

Our records indicate that you have received one or more of the Foxboro model numbered transmitters listed above. This letter is to notify you that two deficiencies have been discovered in some of these transmitters which may exist in the units shipped to you. The transmitters in question operate at a signal level of 10-50mA. Similar model numbered units operating at 4-20mA are not affected.

The first issue involves the possible use of incorrect insulating sleeving on transistor and zener diode lead wires in the amplifier. The second issue involves the use of a specific vendor's capacitor which is not hermetically sealed (although claimed to be so). As a result, the capacitor electrolyte can leak under adverse service conditions, specifically heat and time. The failure mode is a decrease in resistance across the capacitor resulting in electrical leakage. The transmitter operation can be affected by limiting the output to something less than full value which, in time, can degrade to no output at all.

Insulating Sleeving - Radiation resistant sleeving consisting of a silicone coated glass fiber braid has been substituted by a teflon sleeving in some transmitters. Tests have shown that teflon will become brittle and deteriorate with a substantial integrated radiation dose. Foxboro testing has demonstrated that the teflon sleeving used in these devices will withstand an integrated dose of 10 megarads with no noticeable deterioration. Tests to 200 megarads produce the brittle conditions which can result in the teflon flaking from the wires. Based on these tests, operating plants not expected to exceed an integrated dose of 10 megarads have no potential problem and no action is required.

Where the integrated dose rate could exceed 10 megarads, then units in service should be inspected to determine if the proper insulating material has been used. This can be accomplished by opening the transmitter in accordance with Foxboro Master Instruction MI 20-345. The amplifier cover must be removed exposing the amplifier assembly. At one end of the assembly, a transistor and a zener diode are mounted in the base casting which serves as a heat sink. The insulating material in question is a sleeving slipped over the lead wires from these two components. The proper material is white and heavy looking. Positive

FOXBORO

Subject:

identification can be made by inspecting one end of the material to establish that the outer material covers an inner braid. Teflon, if used, will be a single layer material and could be either clear or white.

If improper insulation is present, then the corrective action is to replace the amplifier (Foxboro P/N NO148PW). Replacement amplifiers can be purchased from your local Foxboro Sales or Service Representatives. If you prefer to have Foxboro Service Personnel inspect the equipment and, if necessary, replace the amplifier, this can be arranged at standard service rates.

Capacitor - The capacitor degradation problem was discovered over time through tracking failure situations. Internal corrective action has been taken to remove the vendor involved from the qualified vendor list and to purge all stock of capacitors from this vendor. Degradation of this capacitor is a function of time and service conditions with heat being a primary contributor. This phenomenon was observed in recent tests of transmitters using these capacitors. The capacitor in question is manufactured by Cornell-Duebilier and can be specifically identified by a type number in the form TX-65-XXXX as well as a monogram in a box followed by a date code, e.g. CDE 0874 . It is assigned Foxboro part number NO141MF.

To determine if this capacitor is present requires a visual inspection of the amplifier which can be accomplished as described above for the insulating sleeving inspection. The recommended corrective action should the above described capacitor be present is to replace the amplifier (Foxboro P/N NO148PW) although is is possible to replace the capacitor with a Foxboro provided substitute. Use of Foxboro Service personnel to perform the inspection and replacement, if necessary, can be arranged at standard service rates as described above.

Due to lack of knowledge of specific application, redundancy, and the like, Foxboro cannot determine if the NRC reporting requirements of 10CFR Part 21 are applicable. This determination is the responsibility of the user and any such reporting would be made by them after completing their evaluation of the situation.

If you have any questions regarding the above, please contact the undersigned directly.

Very truly yours,

THE FOXBORO COMPANY

William Calder, Manager
Corporate Quality Assurance

joy
120381

Enclosure MI 20-145

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