

| REVISIONS | |
|--|----------|
| 78 | EC 13556 |
| DWN: JWP 12-22-08 CHK: BAL 12-22-08 APPR: BH 1-5-09 | |
| 79 | EC 12704 |
| DWN: JWP 10-9-09 CHK: BAL 10-12-09 APPR: BH 10-12-09 | |
| 80 | EC 16616 |
| DWN: JWP 1-3-11 CHK: BAL 1-4-11 APPR: JWP 1-6-11 | |
| 81 | EC 19070 |
| DWN: JWP 9-11-12 CHK: BAL 9-12-12 APPR: JWP 9-13-12 | |
| 82 | EC 25011 |
| PAGE 3 ADDED TO .PDF DOC. DWN: JWP 1-28-15 CHK: BAL 1-28-15 APPR: RAD 1-28-15 | |
| 83 | EC 23857 |
| DWN: JWP 4-13-15 CHK: ESS 5-2-15 APPR: MJW 5-2-15 | |

REFERENCE DRAWINGS

1. CRD HYDRAULIC SYSTEM F.C.D. (GE 729E449) 5828-APED-3-28

2. CRD HYDRAULIC SYSTEM PROCESS FLOW DIAG. (GE 729E259) 5828-APED-3-21-2

3. NX-7866-32 FOR ADDITIONAL PIPING

NOTES:

1. ALL SCREWED CAPS MARKED S.W. MUST BE SEAL WELDED FOLLOWING FLUSH AND CHECKOUT TESTS.

2. FOR TYPICAL INDIVIDUAL HYDRAULIC CONTROL UNIT SEE DRAWING No. M-119, NH-36245

COLOR LEGEND

ASME CLASS 1/QUALITY GROUP A

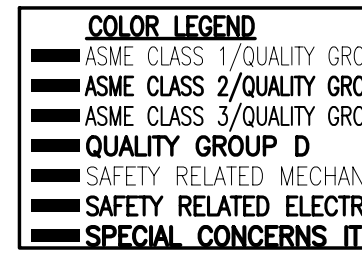
ASME CLASS 2/QUALITY GROUP B

ASME CLASS 3/QUALITY GROUP C


QUALITY GROUP D

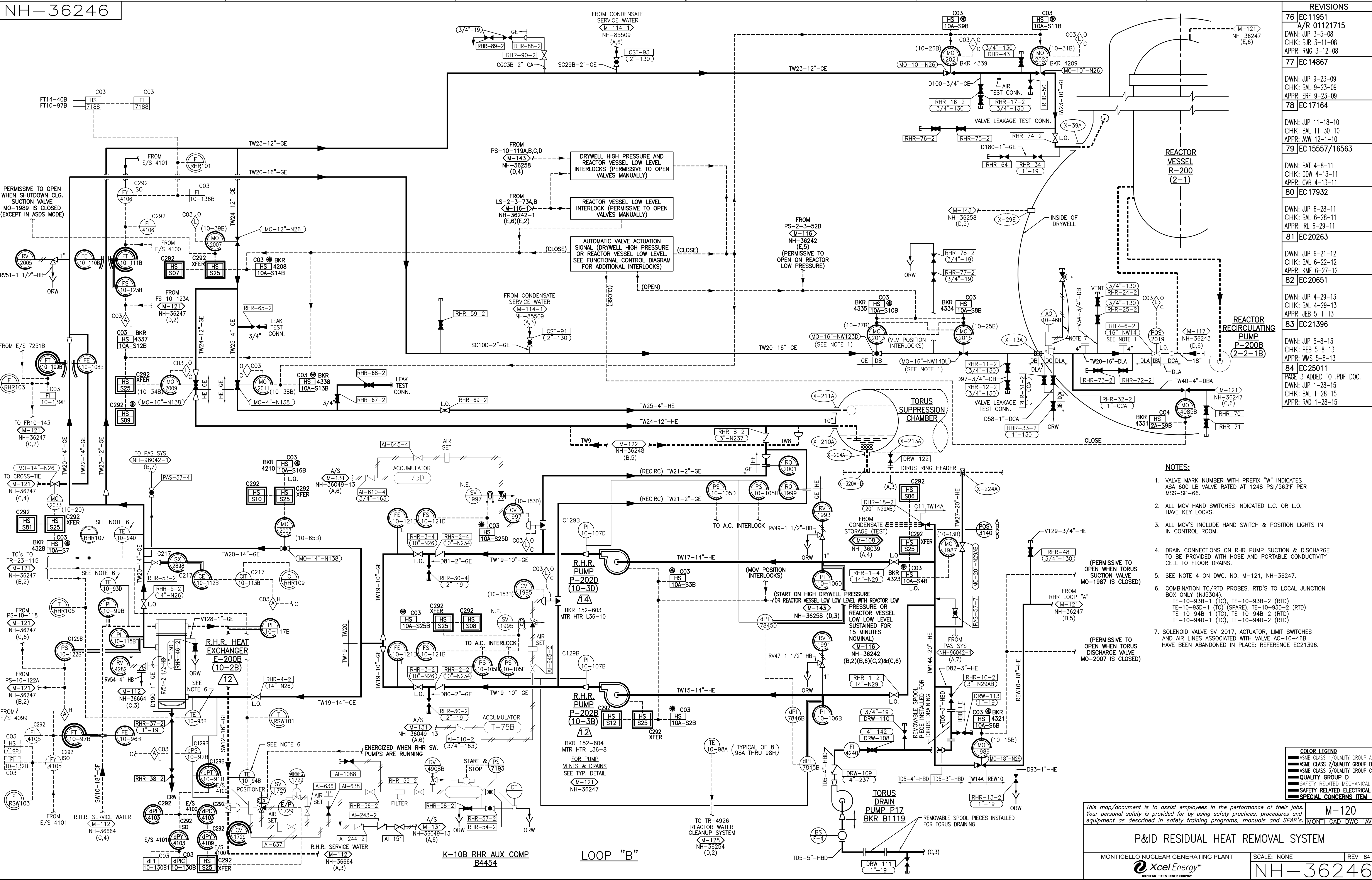
SAFETY RELATED MECHANICAL

SPECIAL CONCERNS ITEM



| | |
|---|------------------|
| This map/document is to assist employees in the performance of their jobs. Your personal safety is provided for by using safety practices, procedures and equipment as described in safety training programs, manuals and SPAR's. | M-119 |
| | MONTI CAD DWG 'M |

| | | |
|--|-------------|----------|
| P&ID CONTROL ROD HYDRAULIC SYSTEM | | |
| MONTICELLO NUCLEAR GENERATING PLANT  | SCALE: NONE | REV 79 |
| NORTHERN STATES POWER COMPANY | | NH-36245 |



| REVISIONS | |
|-----------|--|
| 76 | EC 11951 A/R 01121715 DWN: JWP 3-5-08 CHK: BJR 3-11-08 APPR: RMG 3-12-08 |
| 77 | EC 14867 DWN: JWP 9-23-09 CHK: BAL 9-23-09 APPR: ERF 9-23-09 |
| 78 | EC 17164 DWN: JWP 11-18-10 CHK: BAL 11-30-10 APPR: ANW 12-1-10 |
| 79 | EC 15557/16563 DWN: BAT 4-8-11 CHK: DW 4-13-11 APPR: CVB 4-13-11 |
| 80 | EC 17932 DWN: JWP 6-28-11 CHK: BAL 6-28-11 APPR: RLL 6-27-11 |
| 81 | EC 20263 DWN: JWP 6-21-12 CHK: BAL 6-22-12 APPR: KMF 6-27-12 |
| 82 | EC 20651 DWN: JWP 4-29-13 CHK: BAL 4-29-13 APPR: JEB 5-1-13 |
| 83 | EC 21396 DWN: JWP 5-8-13 CHK: PEB 5-8-13 APPR: WMS 5-8-13 |
| 84 | EC 25011 PAGE 3 ADDED TO .PDF DOC. DWN: JWP 1-28-15 CHK: BAL 1-28-15 APPR: RAD 1-28-15 |

- NOTES:**
1. VALVE MARK NUMBER WITH PREFIX "W" INDICATES ASA 600 LB VALVE RATED AT 1248 PSI/563°F PER MSS-SP-66.
 2. ALL MOV HAND SWITCHES INDICATED L.C. OR L.O. HAVE KEY LOCKS.
 3. ALL MOV'S INCLUDE HAND SWITCH & POSITION LIGHTS IN CONTROL ROOM.
 4. DRAIN CONNECTIONS ON RHR PUMP SUCTION & DISCHARGE TO BE PROVIDED WITH HOSE AND PORTABLE CONDUCTIVITY CELL TO FLOOR DRAINS.
 5. SEE NOTE 4 ON DWG. NO. M-121, NH-36247.
 6. COMBINATION TC/RTD PROBES. RTD'S TO LOCAL JUNCTION BOX ONLY (NU5304).
TE-10-93B-1 (TC), TE-10-93B-2 (RTD)
TE-10-93D-1 (TC) (SPARE), TE-10-93D-2 (RTD)
TE-10-94B-1 (TC), TE-10-94B-2 (RTD)
TE-10-94D-1 (TC), TE-10-94D-2 (RTD)
 7. SOLENOID VALVE SV-2017, ACTUATOR, LIMIT SWITCHES AND AIR LINES ASSOCIATED WITH VALVE AO-10-46B HAVE BEEN ABANDONED IN PLACE; REFERENCE EC21396.

| COLOR LEGEND | |
|------------------------------|--|
| ASME CLASS 1/QUALITY GROUP A | |
| ASME CLASS 2/QUALITY GROUP B | |
| ASME CLASS 3/QUALITY GROUP C | |
| QUALITY GROUP D | |
| SAFETY RELATED MECHANICAL | |
| SAFETY RELATED ELECTRICAL | |
| SPECIAL CONCERN ITEM | |

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M-120
MONTICELLO CAD DWG "AV"

P&ID RESIDUAL HEAT REMOVAL SYSTEM

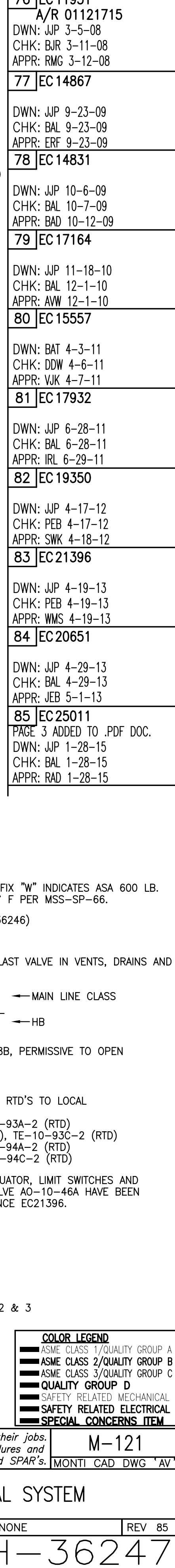
MONTICELLO NUCLEAR GENERATING PLANT

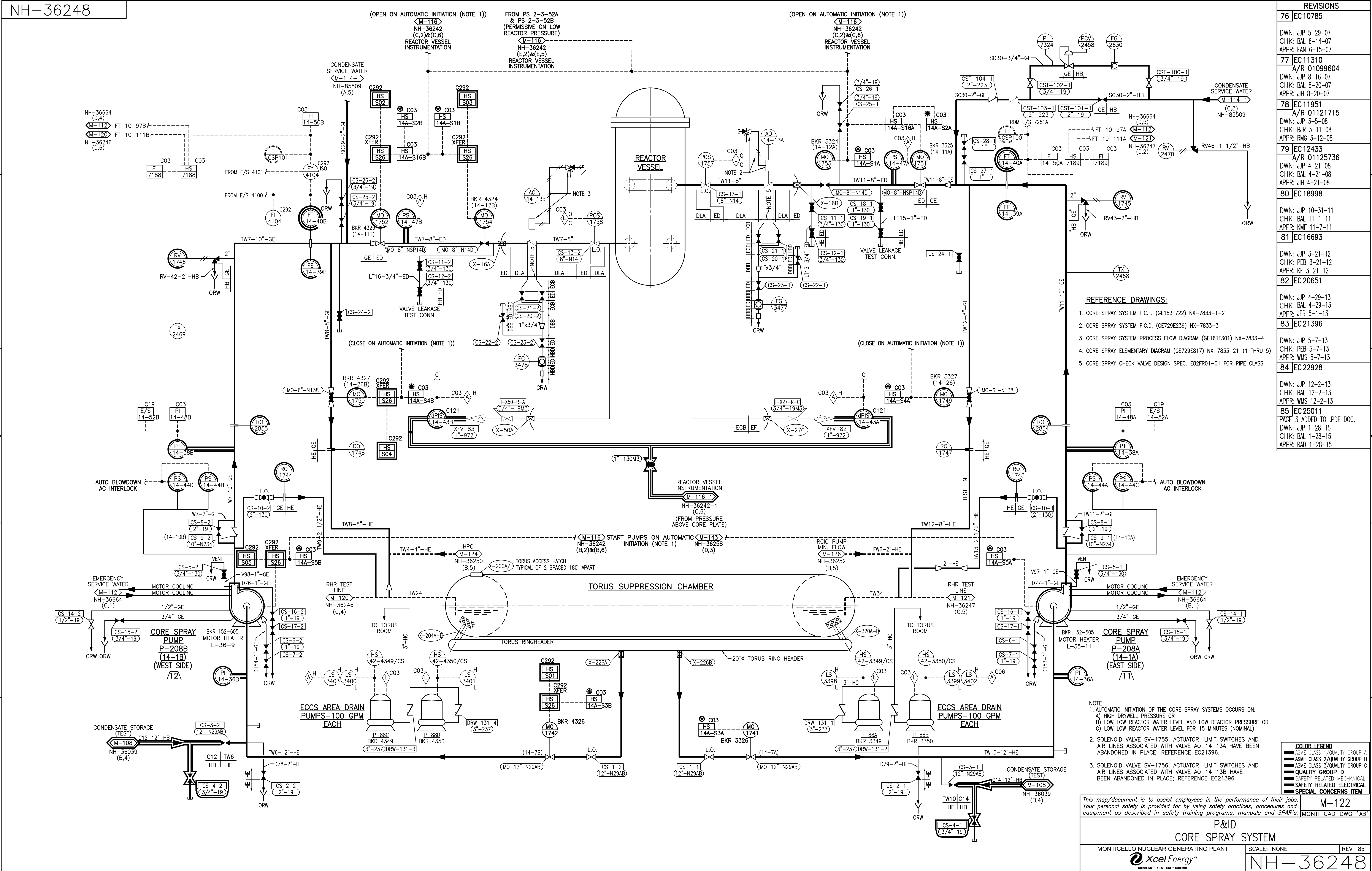
Xcel Energy
NORTHERN STATES POWER COMPANY

SCALE: NONE

REV 84

NH-36246





| REVISIONS | |
|-----------|--|
| 76 | EC 10785 DWN: JWP 5-29-07 CHK: BAL 6-14-07 APPR: EAM 6-15-07 |
| 77 | EC 11310 A/R 01099604 DWN: JWP 8-16-07 CHK: BAL 8-20-07 APPR: JIH 8-20-07 |
| 78 | EC 11951 A/R 01121715 DWN: JWP 3-5-08 CHK: BUR 3-11-08 APPR: RMG 3-12-08 |
| 79 | EC 12433 A/R 01125736 DWN: JWP 4-21-08 CHK: BAL 4-21-08 APPR: JIH 4-21-08 |
| 80 | EC 18998 DWN: JWP 10-31-11 CHK: BAL 11-1-11 APPR: KMF 11-7-11 |
| 81 | EC 16693 DWN: JWP 3-21-12 CHK: PEB 3-21-12 APPR: KF 3-21-12 |
| 82 | EC 20651 DWN: JWP 4-29-13 CHK: BAL 4-29-13 APPR: JEB 5-1-13 |
| 83 | EC 21396 DWN: JWP 5-7-13 CHK: PEB 5-7-13 APPR: WMS 5-7-13 |
| 84 | EC 22928 DWN: JWP 12-2-13 CHK: BAL 12-2-13 APPR: WMS 12-2-13 |
| 85 | EC 25011 PAGE 3 ADDED TO .PDF DOC. DWN: JWP 1-28-15 CHK: BAL 1-28-15 APPR: RAD 1-28-15 |

- REFERENCE DRAWINGS:
- CORE SPRAY SYSTEM F.C.F. (GE153F722) NX-7833-1-2
 - CORE SPRAY SYSTEM F.C.D. (GE729E239) NX-7833-3
 - CORE SPRAY SYSTEM PROCESS FLOW DIAGRAM (GE161F301) NX-7833-4
 - CORE SPRAY ELEMENTARY DIAGRAM (GE729E817) NX-7833-21-(1 THRU 5)
 - CORE SPRAY CHECK VALVE DESIGN SPEC. E82FR01-01 FOR PIPE CLASS

NOTE:

- AUTOMATIC INITIATION OF THE CORE SPRAY SYSTEMS OCCURS ON:
A) HIGH DRYWELL PRESSURE OR
B) LOW LOW REACTOR WATER LEVEL AND LOW REACTOR PRESSURE OR
C) LOW LOW REACTOR WATER LEVEL FOR 15 MINUTES (NOMINAL).
- SOLENOID VALVE SV-1755, ACTUATOR, LIMIT SWITCHES AND AIR LINES ASSOCIATED WITH VALVE AO-14-13A HAVE BEEN ABANDONED IN PLACE; REFERENCE EC21396.
- SOLENOID VALVE SV-1756, ACTUATOR, LIMIT SWITCHES AND AIR LINES ASSOCIATED WITH VALVE AO-14-13B HAVE BEEN ABANDONED IN PLACE; REFERENCE EC21396.

| COLOR LEGEND | |
|------------------------------|--|
| ASME CLASS 1/QUALITY GROUP A | |
| ASME CLASS 2/QUALITY GROUP B | |
| ASME CLASS 3/QUALITY GROUP C | |
| ASME CLASS 4/QUALITY GROUP D | |
| SAFETY RELATED MECHANICAL | |
| SAFETY RELATED ELECTRICAL | |
| SPECIAL CONCERNS ITEM | |

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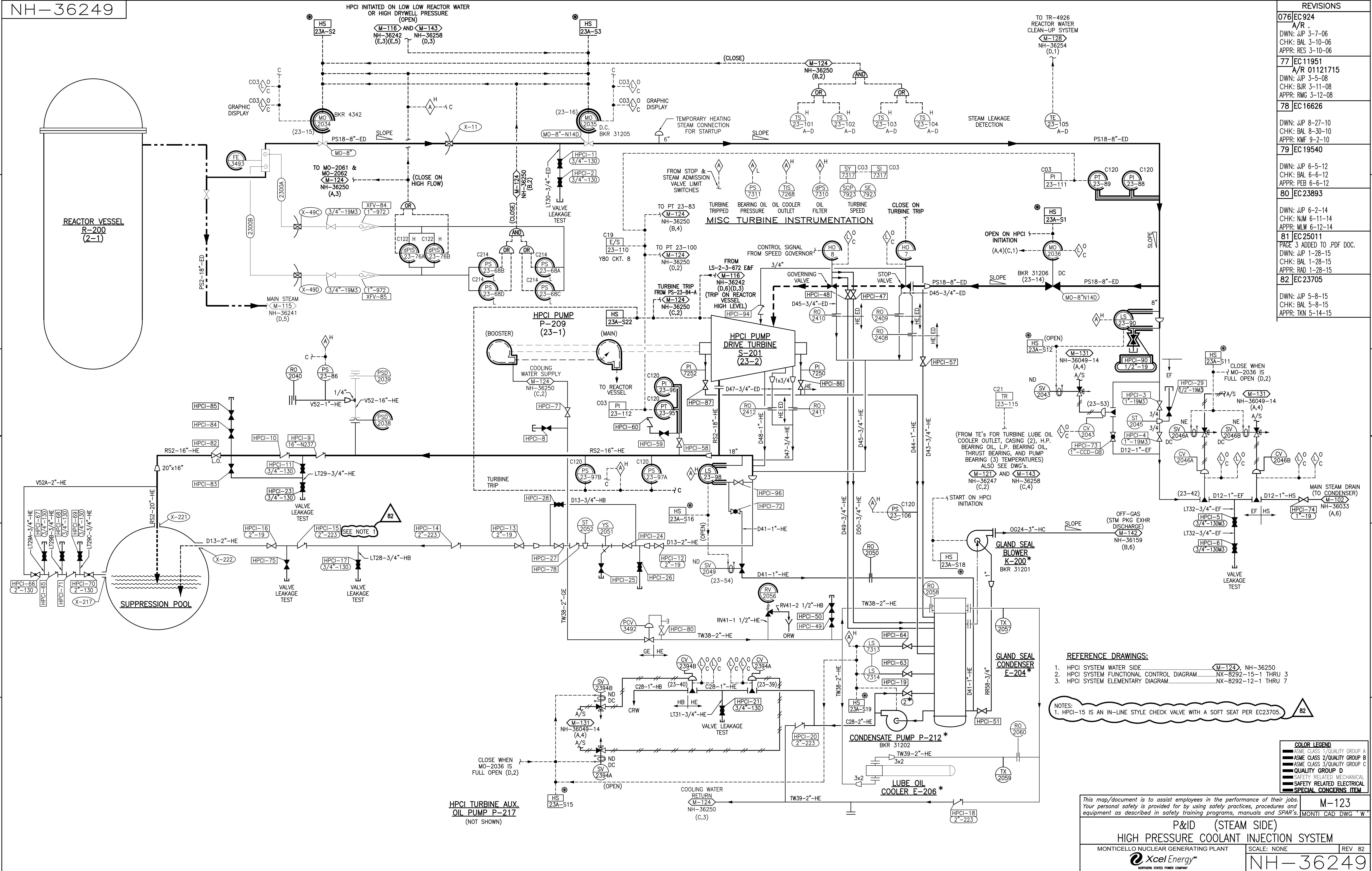
P&ID
CORE SPRAY SYSTEM

MONTICELLO NUCLEAR GENERATING PLANT

SCALE: NONE

REV 85

NH-36248



| REVISIONS | |
|-----------|--|
| 076 | EC 924 A/R DWN: JWP 3-7-06 CHK: BAL 3-10-06 APPR: RES 3-10-06 |
| 77 | EC 11951 A/R 01121715 DWN: JWP 3-5-08 CHK: BUR 3-11-08 APPR: RMG 3-12-08 |
| 78 | EC 16626 DWN: JWP 8-27-10 CHK: BAL 8-30-10 APPR: KMF 9-2-10 |
| 79 | EC 19540 DWN: JWP 6-5-12 CHK: BAL 6-6-12 APPR: PEB 6-12-12 |
| 80 | EC 23893 DWN: JWP 6-2-14 CHK: NJM 6-11-14 APPR: MLW 6-12-14 |
| 81 | EC 25011 PAGE 3 ADDED TO .PDF DOC. DWN: JWP 1-28-15 CHK: BAL 1-28-15 APPR: RAD 1-28-15 |
| 82 | EC 23705 DWN: JWP 5-8-15 CHK: BAL 5-8-15 APPR: TKN 5-14-15 |

REFERENCE DRAWINGS:

1. HPCI SYSTEM WATER SIDE. M-124, NH-36250
2. HPCI SYSTEM FUNCTIONAL CONTROL DIAGRAM. NX-8292-15-1 THRU 3
3. HPCI SYSTEM ELEMENTARY DIAGRAM. NX-8292-12-1 THRU 7

NOTES:
1. HPCI-15 IS AN IN-LINE STYLE CHECK VALVE WITH A SOFT SEAT PER EC23705.

| COLOR LEGEND | |
|------------------------------|--|
| ASME CLASS 1/QUALITY GROUP A | |
| ASME CLASS 2/QUALITY GROUP B | |
| ASME CLASS 3/QUALITY GROUP C | |
| QUALITY GROUP D | |
| SAFETY RELATED MECHANICAL | |
| SAFETY RELATED ELECTRICAL | |
| SPECIAL CONCERNS ITEM | |

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P&ID (STEAM SIDE)
HIGH PRESSURE COOLANT INJECTION SYSTEM

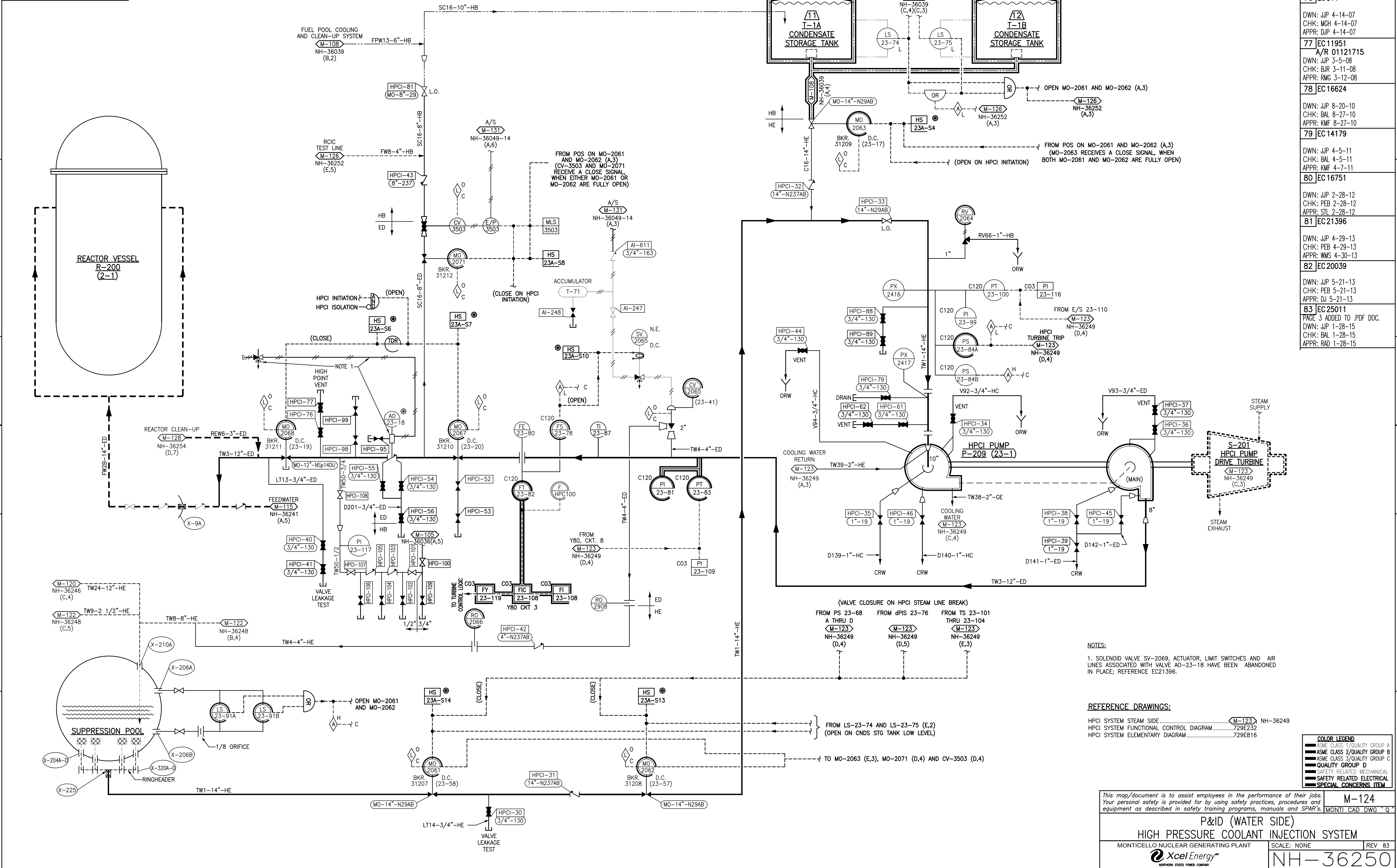
MONTICELLO NUCLEAR GENERATING PLANT

Xcel Energy
NORTHERN STATES POWER COMPANY

SCALE: NONE

REV 82

NH-36249



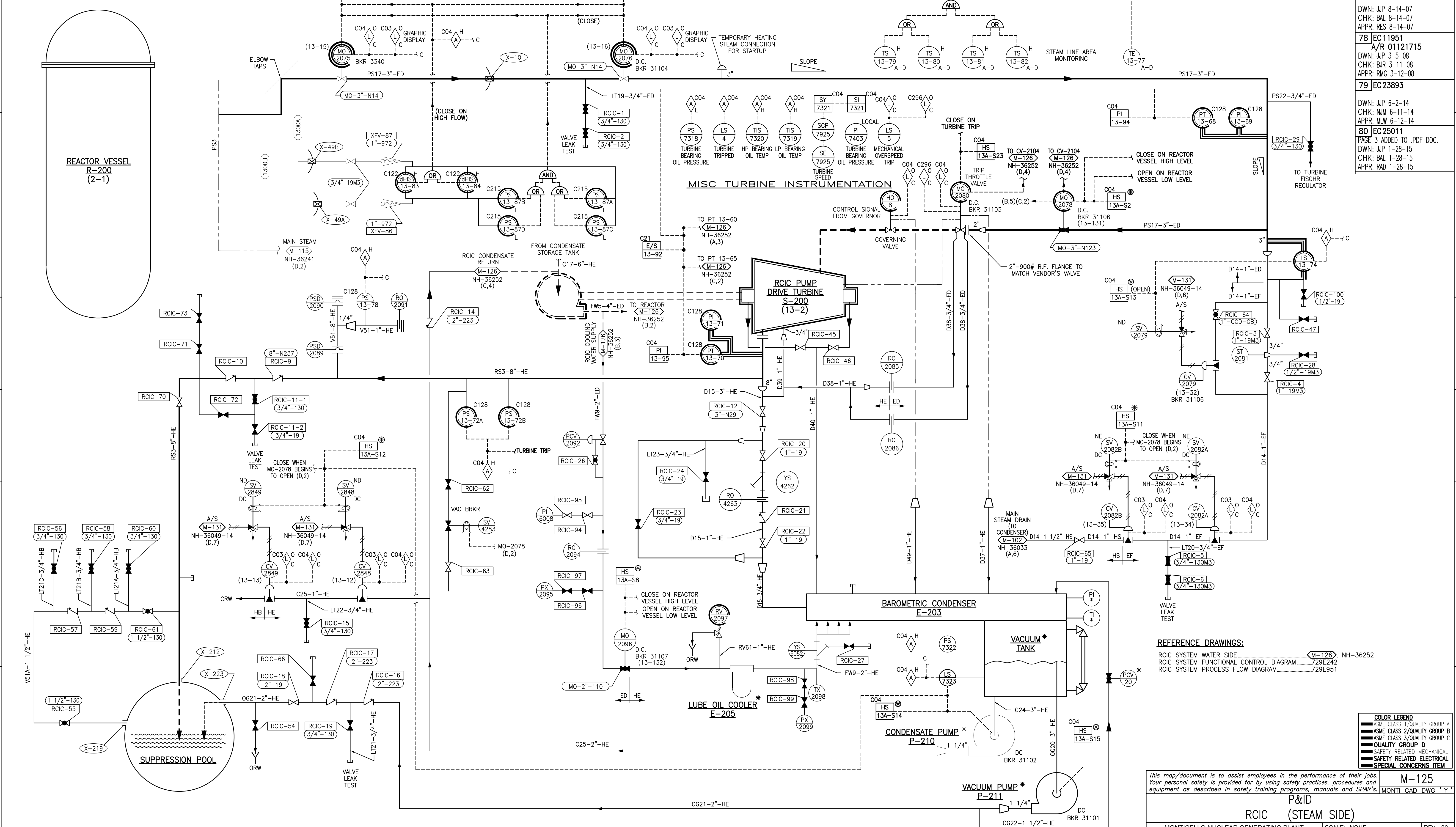
E

D

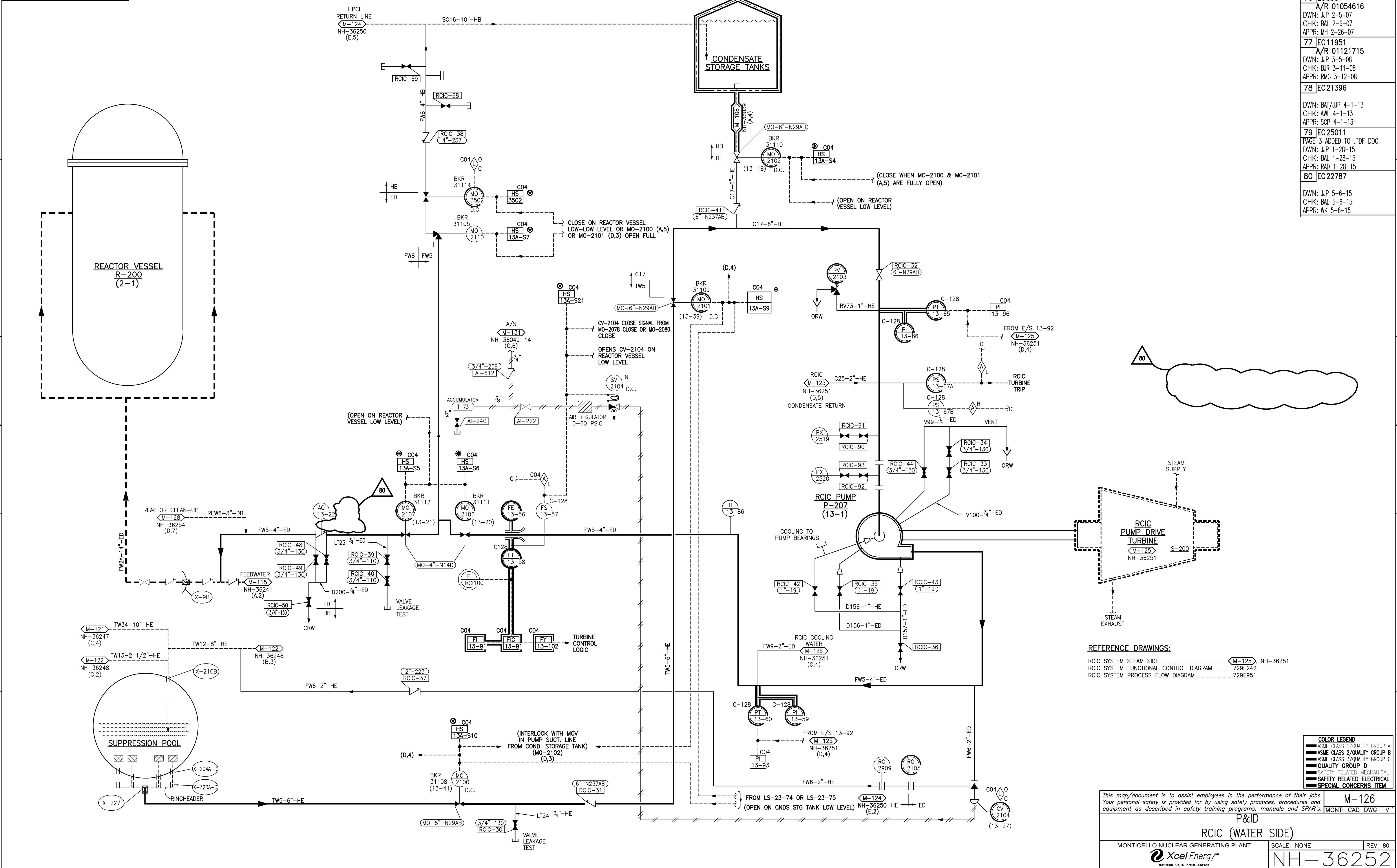
C

B

A



NH-36252



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P&ID
RCIC (WATER SIDE)

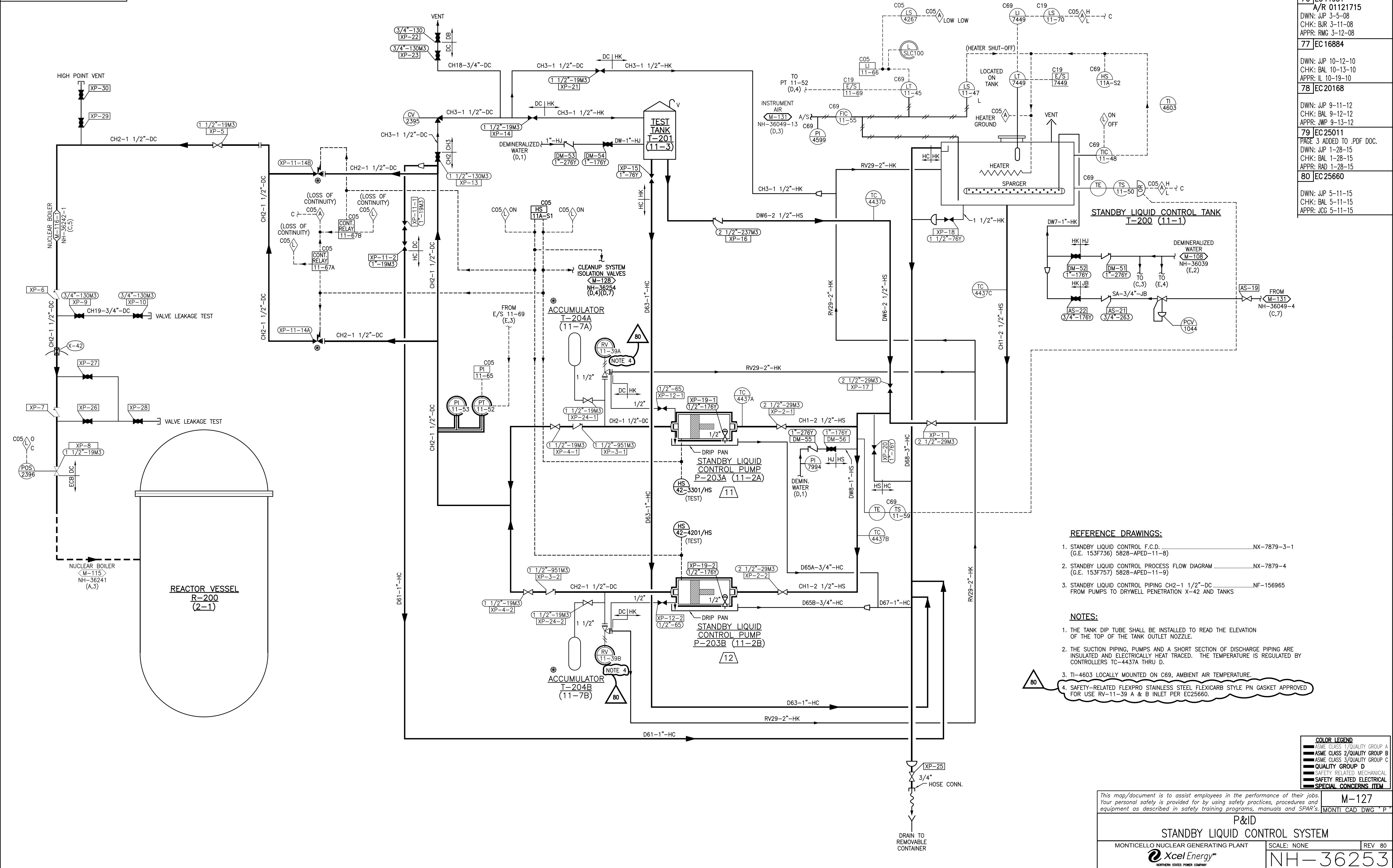
MONTICELLO NUCLEAR GENERATING PLANT

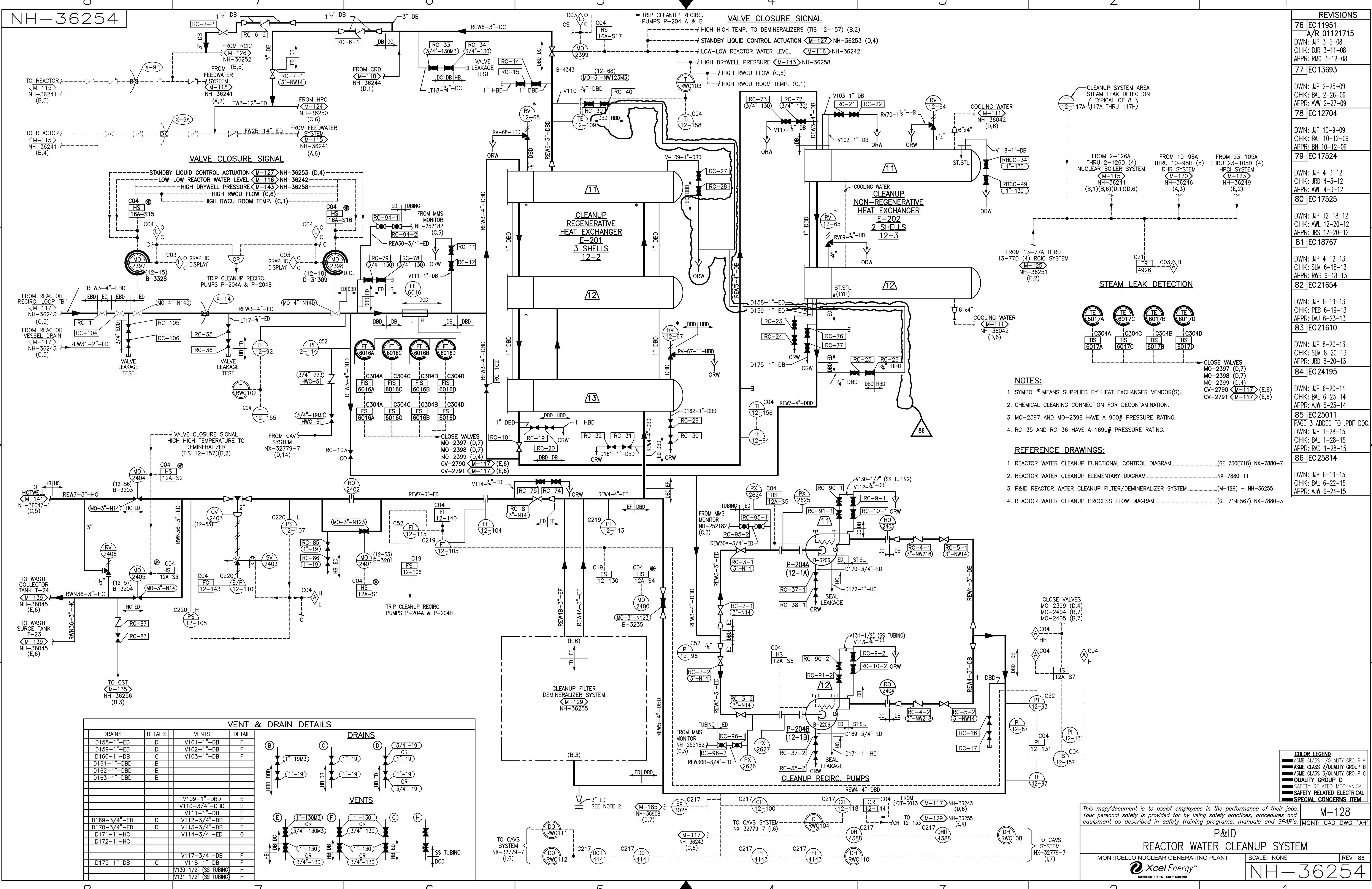
Xcel Energy
NORTHERN STATES POWER COMPANY

SCALE: NONE

REV 80

NH-36252





| REVISIONS | |
|-----------|--|
| 76 | EC 11951 A/R 01121715 DWN: JUP 3-5-08 CHK: BJR 3-11-08 APPR: RMG 3-12-08 |
| 77 | EC 13693 DWN: JUP 2-25-09 CHK: BAL 2-26-09 APPR: AWW 2-27-09 |
| 78 | EC 12704 DWN: JUP 10-9-09 CHK: BAL 10-12-09 APPR: BH 10-12-09 |
| 79 | EC 17524 DWN: JUP 4-3-12 CHK: JRD 4-3-12 APPR: AML 4-3-12 |
| 80 | EC 17525 DWN: JUP 12-18-12 CHK: AML 12-20-12 APPR: JRS 12-20-12 |
| 81 | EC 18767 DWN: JUP 4-12-13 CHK: SLM 6-18-13 APPR: RWS 6-18-13 |
| 82 | EC 21654 DWN: JUP 6-19-13 CHK: PEB 6-19-13 APPR: JRS 6-23-13 |
| 83 | EC 21610 DWN: JUP 8-20-13 CHK: SLM 8-20-13 APPR: RAD 8-20-13 |
| 84 | EC 24195 DWN: JUP 6-20-14 CHK: BAL 6-23-14 APPR: AJW 6-23-14 |
| 85 | EC 25011 PAGE 3 ADDED TO .PDF DOC. DWN: JUP 1-28-15 CHK: BAL 1-28-15 APPR: RAD 1-28-15 |
| 86 | EC 25814 DWN: JUP 6-19-15 CHK: BAL 6-22-15 APPR: AJW 6-24-15 |

- NOTES:**
- SYMBOL * MEANS SUPPLIED BY HEAT EXCHANGER VENDOR(S).
 - CHEMICAL CLEANING CONNECTION FOR DECONTAMINATION.
 - MO-2397 AND MO-2398 HAVE A 900# PRESSURE RATING.
 - RC-35 AND RC-36 HAVE A 1690# PRESSURE RATING.
- REFERENCE DRAWINGS:**
- REACTOR WATER CLEANUP FUNCTIONAL CONTROL DIAGRAM.....(GE 730E718) NX-7880-7
 - REACTOR WATER CLEANUP ELEMENTARY DIAGRAM.....NX-7880-11
 - P&ID REACTOR WATER CLEANUP FILTER/DEMINERALIZER SYSTEM.....(M-129) - NH-36255
 - REACTOR WATER CLEANUP PROCESS FLOW DIAGRAM.....(GE 719E567) NX-7880-3

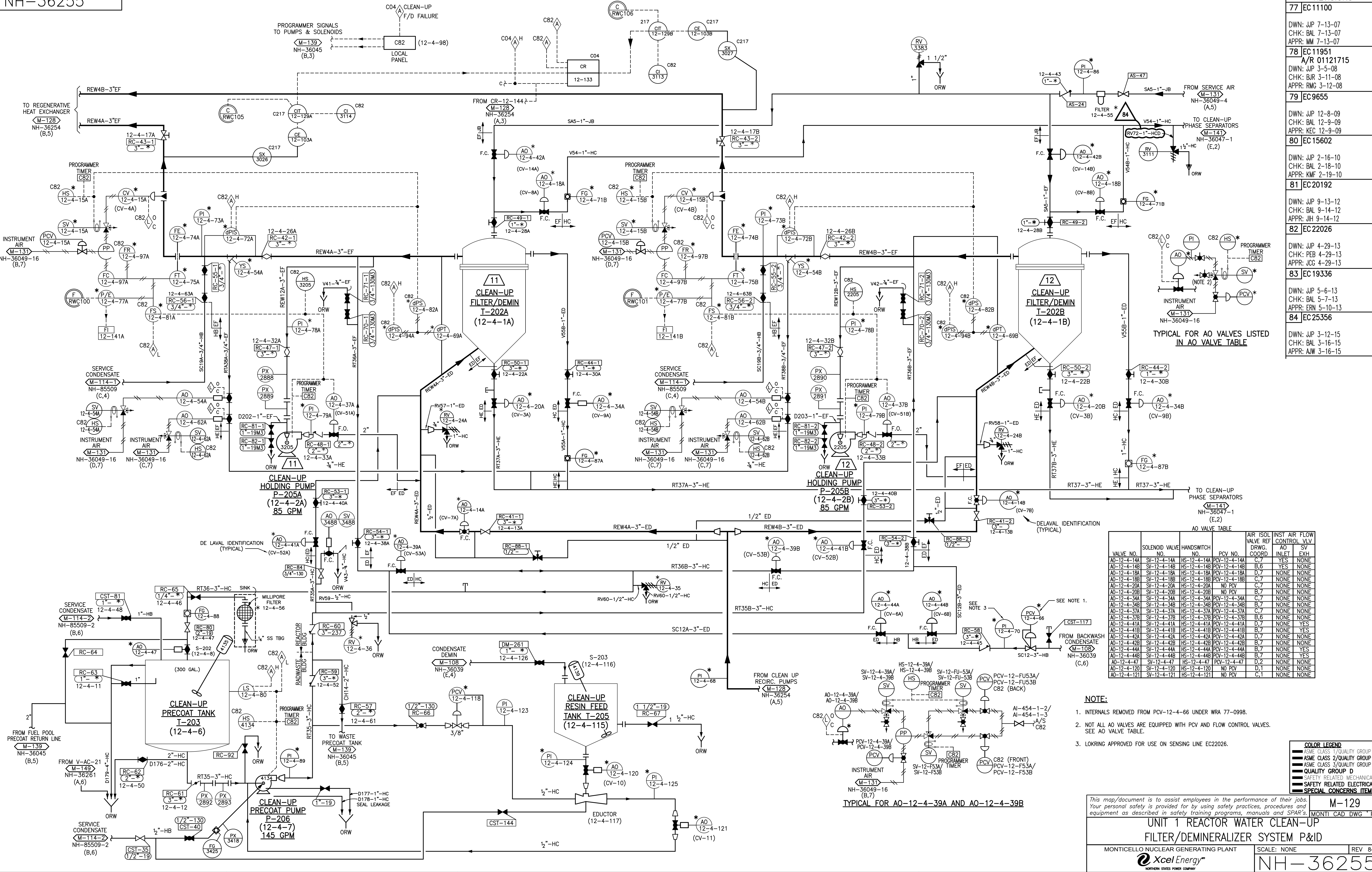
This map/document is to assist employees in the performance of their jobs. Your personal safety is provided for by using safety practices, procedures and equipment as described in safety training programs, manuals and SPAR's.

P&ID
REACTOR WATER CLEANUP SYSTEM

MONTICELLO NUCLEAR GENERATING PLANT
Xcel Energy
NORTHERN STATES POWER COMPANY

SCALE: NONE
REV 86
M-128
MONTI CAD DWG "AH"

NH-36254



| REVISIONS | |
|--|---------|
| 77 | EC11100 |
| DWN: JJP 7-13-07 CHK: BAL 7-13-07 APPR: MM 7-13-07 | |
| 78 | EC11951 |
| A/R 01121715 DWN: JJP 3-5-08 CHK: BUR 3-11-08 APPR: RMG 3-12-08 | |
| 79 | EC9655 |
| DWN: JJP 12-8-09 CHK: BAL 12-9-09 APPR: KEC 12-9-09 | |
| 80 | EC15602 |
| DWN: JJP 2-16-10 CHK: BAL 2-18-10 APPR: KMF 2-19-10 | |
| 81 | EC20192 |
| DWN: JJP 9-13-12 CHK: BAL 9-14-12 APPR: JCH 9-14-12 | |
| 82 | EC22026 |
| DWN: JJP 4-29-13 CHK: PEB 4-29-13 APPR: JCC 4-29-13 | |
| 83 | EC19336 |
| DWN: JJP 5-6-13 CHK: BAL 5-7-13 APPR: ERN 5-10-13 | |
| 84 | EC25356 |
| DWN: JJP 3-12-15 CHK: BAL 3-16-15 APPR: AJW 3-16-15 | |

AO VALVE TABLE

| VALVE NO. | SOLENOID VALVE NO. | HANDSWITCH NO. | PCV NO. | AIR ISOL VALVE REF DRWG. COORD. | INST AIR FLOW CONTROL VLV | SV |
|-------------|--------------------|----------------|--------------|---------------------------------|---------------------------|------|
| AO-12-4-14A | SV-12-4-14A | HS-12-4-14A | PCV-12-4-14A | C,7 | YES | NONE |
| AO-12-4-14B | SV-12-4-14B | HS-12-4-14B | PCV-12-4-14B | B,6 | YES | NONE |
| AO-12-4-18A | SV-12-4-18A | HS-12-4-18A | PCV-12-4-18A | D,7 | NONE | NONE |
| AO-12-4-18B | SV-12-4-18B | HS-12-4-18B | PCV-12-4-18B | C,7 | NONE | NONE |
| AO-12-4-20A | SV-12-4-20A | HS-12-4-20A | NO PCV | C,7 | NONE | NONE |
| AO-12-4-20B | SV-12-4-20B | HS-12-4-20B | NO PCV | B,7 | NONE | NONE |
| AO-12-4-34A | SV-12-4-34A | HS-12-4-34A | PCV-12-4-34A | C,7 | NONE | NONE |
| AO-12-4-34B | SV-12-4-34B | HS-12-4-34B | PCV-12-4-34B | C,7 | NONE | NONE |
| AO-12-4-37A | SV-12-4-37A | HS-12-4-37A | PCV-12-4-37A | C,7 | NONE | NONE |
| AO-12-4-37B | SV-12-4-37B | HS-12-4-37B | PCV-12-4-37B | B,6 | NONE | NONE |
| AO-12-4-41A | SV-12-4-41A | HS-12-4-41A | PCV-12-4-41A | D,7 | NONE | YES |
| AO-12-4-41B | SV-12-4-41B | HS-12-4-41B | PCV-12-4-41B | B,7 | NONE | YES |
| AO-12-4-42A | SV-12-4-42A | HS-12-4-42A | PCV-12-4-42A | D,7 | NONE | NONE |
| AO-12-4-42B | SV-12-4-42B | HS-12-4-42B | PCV-12-4-42B | B,7 | NONE | YES |
| AO-12-4-44A | SV-12-4-44A | HS-12-4-44A | PCV-12-4-44A | B,7 | NONE | YES |
| AO-12-4-44B | SV-12-4-44B | HS-12-4-44B | PCV-12-4-44B | B,7 | NONE | YES |
| AO-12-4-47 | SV-12-4-47 | HS-12-4-47 | PCV-12-4-47 | D,2 | NONE | NONE |
| AO-12-4-120 | SV-12-4-120 | HS-12-4-120 | NO PCV | NONE | NONE | NONE |
| AO-12-4-121 | SV-12-4-121 | HS-12-4-121 | NO PCV | C,1 | NONE | NONE |

NOTE:

1. INTERNALS REMOVED FROM PCV-12-4-66 UNDER WRA 77-0998.
2. NOT ALL AO VALVES ARE EQUIPPED WITH PCV AND FLOW CONTROL VALVES. SEE AO VALVE TABLE.
3. LOKRING APPROVED FOR USE ON SENSING LINE EC22026.

COLOR LEGEND

- ASME CLASS 1/QUALITY GROUP A
- ASME CLASS 2/QUALITY GROUP B
- ASME CLASS 3/QUALITY GROUP C
- SAFETY RELATED MECHANICAL
- SAFETY RELATED ELECTRICAL
- SPECIAL CONCERNS ITEM

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UNIT 1 REACTOR WATER CLEAN-UP FILTER/DEMINERALIZER SYSTEM P&ID

MONTICELLO NUCLEAR GENERATING PLANT

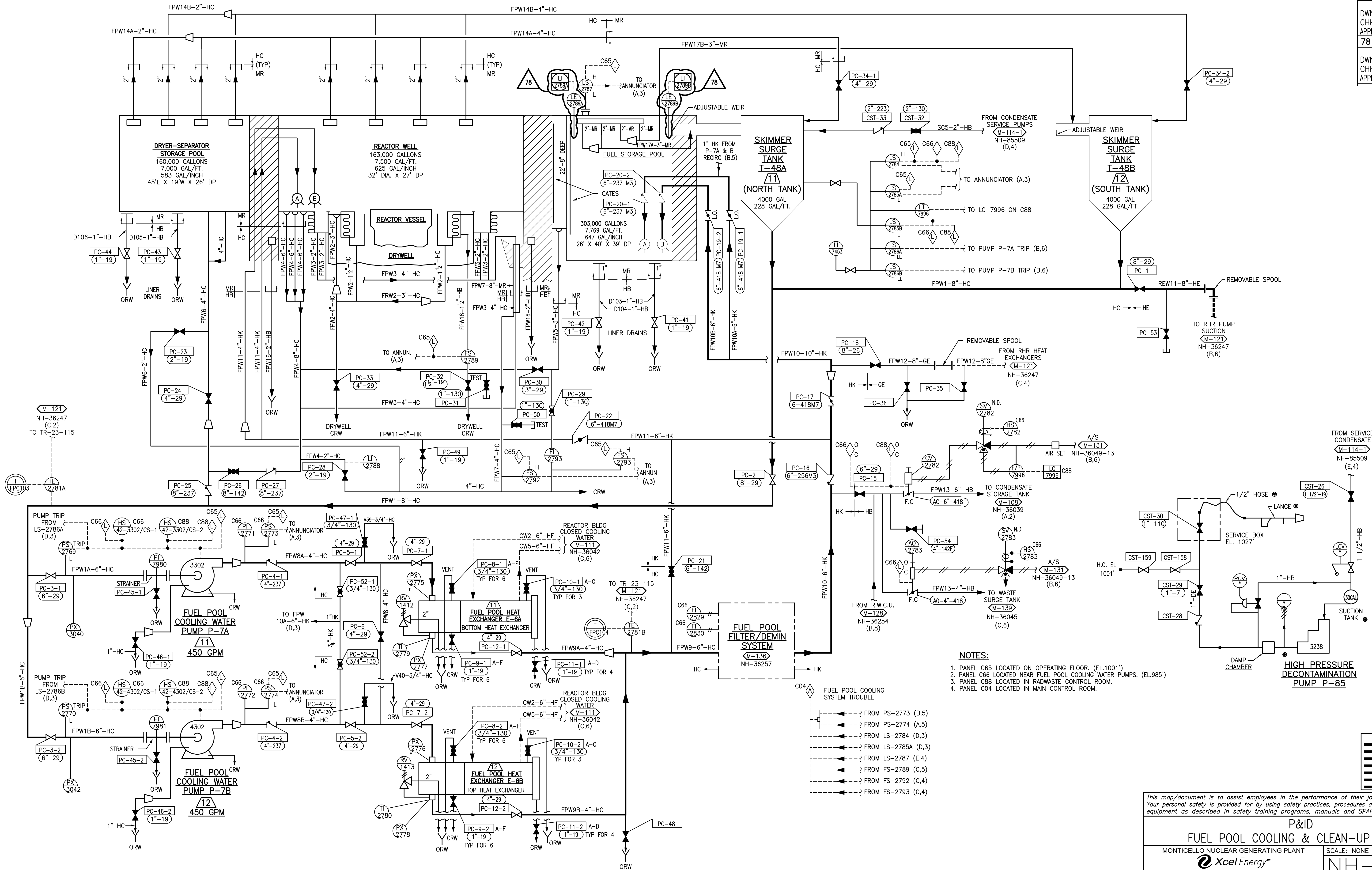
SCALE: NONE

REV 84

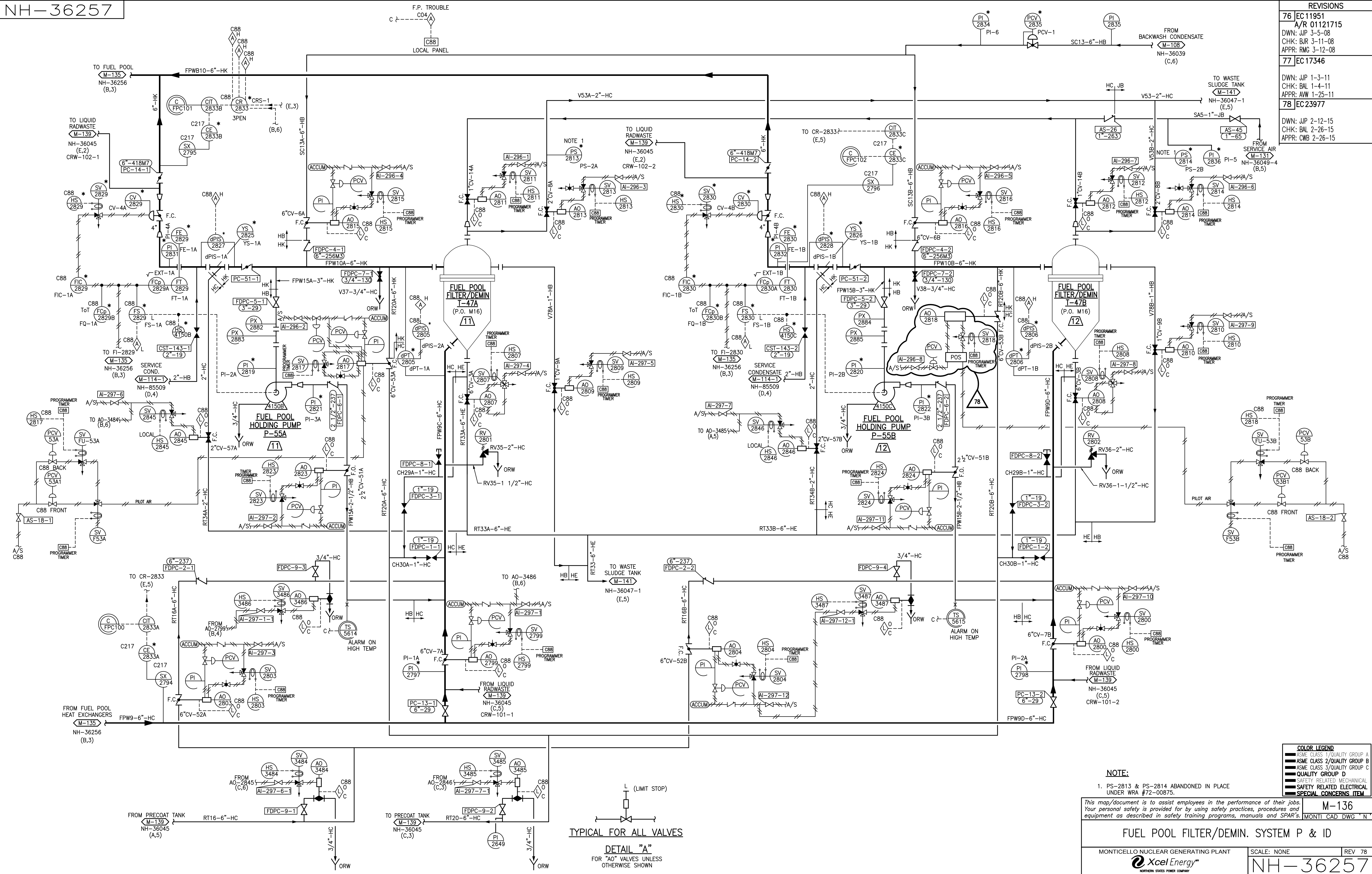
NH-36255

M-129
MONTI CAD DWG "P"

| REVISIONS | |
|-----------|---|
| 76 | EC11951 A/R 01121715 DWN: JJP 3-5-08 CHK: BJR 3-11-08 APPR: RMG 3-12-08 |
| 77 | EC22690 DWN: JJP 9-24-13 CHK: BAL 9-26-13 APPR: TM 10-1-13 |
| 78 | EC23419 DWN: JJP 2-25-15 CHK: AJR 2-25-15 APPR: DJS 2-25-15 |



| | |
|---|-------------|
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| M-135 MONTICELLO CAD DWG "X" | REV 78 |
| P&ID FUEL POOL COOLING & CLEAN-UP SYSTEM | |
| MONTICELLO NUCLEAR GENERATING PLANT | SCALE: NONE |
| Xcel Energy NORTHERN STATES POWER COMPANY | |
| NH-36256 | |



| REVISIONS | |
|-----------|--|
| 76 | EC 11951 A/R 01121715 DWN: JWP 3-5-08 CHK: BJR 3-11-08 APPR: RMG 3-12-08 |
| 77 | EC 17346 DWN: JWP 1-3-11 CHK: BAL 1-4-11 APPR: AW 1-25-11 |
| 78 | EC 23977 DWN: JWP 2-12-15 CHK: BAL 2-26-15 APPR: CWB 2-26-15 |

| COLOR LEGEND | |
|---|------------------------------|
| | ASME CLASS 1/QUALITY GROUP A |
| | ASME CLASS 2/QUALITY GROUP B |
| | ASME CLASS 3/QUALITY GROUP C |
| | QUALITY GROUP D |
| | SAFETY RELATED MECHANICAL |
| | SAFETY RELATED ELECTRICAL |
| | SPECIAL CONCERN ITEM |

NOTE:

1. PS-2813 & PS-2814 ABANDONED IN PLACE UNDER WRA #72-00875.

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FUEL POOL FILTER/DEMIN. SYSTEM P & ID

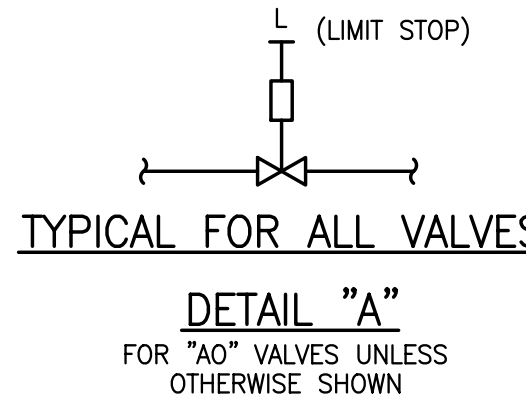
MONTICELLO NUCLEAR GENERATING PLANT

Xcel Energy

SCALE: NONE

REV 78

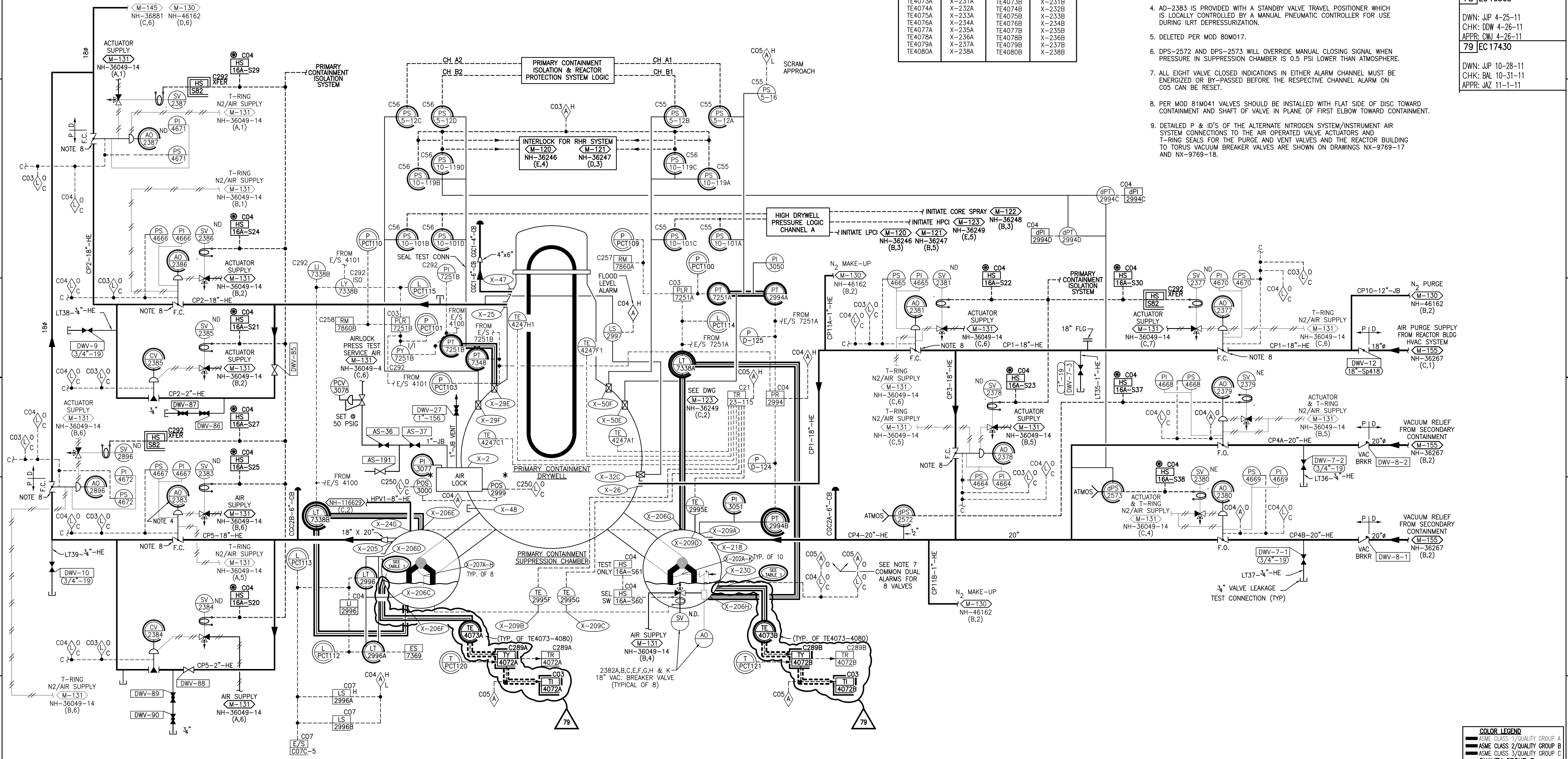
NH-36257



| REVISIONS | |
|-----------|--|
| 76 | EC 11951 A/R 01121715 DWN: JWP 3-5-08 CHK: BJR 3-11-08 APPR: RMG 3-12-08 |
| 77 | EC 12558 A/R 01123311 DWN: JWP 5-20-08 CHK: JT 5-22-08 APPR: DCA 5-22-08 |
| 78 | EC 16563 DWN: JWP 4-25-11 CHK: DW 4-26-11 APPR: CMJ 4-26-11 |
| 79 | EC 17430 DWN: JWP 10-28-11 CHK: BAL 10-31-11 APPR: JAZ 11-1-11 |

| TABLE 1 | |
|--------------------------|-------------------------|
| SPOTMOS DIV. I | |
| TEMP. SENSOR DESIGNATION | PENETRATION DESIGNATION |
| TE4073A | X-231A |
| TE4074A | X-232A |
| TE4075A | X-233A |
| TE4076A | X-234A |
| TE4077A | X-235A |
| TE4078A | X-236A |
| TE4079A | X-237A |
| TE4080A | X-238A |
| SPOTMOS DIV. II | |
| TEMP. SENSOR DESIGNATION | PENETRATION DESIGNATION |
| TE4073B | X-231B |
| TE4074B | X-232B |
| TE4075B | X-233B |
| TE4076B | X-234B |
| TE4077B | X-235B |
| TE4078B | X-236B |
| TE4079B | X-237B |
| TE4080B | X-238B |

- NOTES:
1. DELETED
 2. DELETED
 3. DELETED AS A RESULT OF MOD 81M041.
 4. AO-2383 IS PROVIDED WITH A STANDBY VALVE TRAVEL POSITIONER WHICH IS LOCALLY CONTROLLED BY A MANUAL PNEUMATIC CONTROLLER FOR USE DURING ILRT DEPRESSURIZATION.
 5. DELETED PER MOD 80M017.
 6. DPS-2572 AND DPS-2573 WILL OVERRIDE MANUAL CLOSING SIGNAL WHEN PRESSURE IN SUPPRESSION CHAMBER IS 0.5 PSI LOWER THAN ATMOSPHERE.
 7. ALL EIGHT VALVE CLOSED INDICATIONS IN EITHER ALARM CHANNEL MUST BE ENERGIZED OR BY-PASSED BEFORE THE RESPECTIVE CHANNEL ALARM ON C05 CAN BE RESET.
 8. PER MOD 81M041 VALVES SHOULD BE INSTALLED WITH FLAT SIDE OF DISC TOWARD CONTAINMENT AND SHAFT OF VALVE IN PLANE OF FIRST ELBOW TOWARD CONTAINMENT.
 9. DETAILED P & ID'S OF THE ALTERNATE NITROGEN SYSTEM/INSTRUMENT AIR SYSTEM CONNECTIONS TO THE AIR OPERATED VALVE ACTUATORS AND T-RING SEALS FOR THE PURGE AND VENT VALVES AND THE REACTOR BUILDING TO TORUS VACUUM BREAKER VALVES ARE SHOWN ON DRAWINGS NX-9769-17 AND NX-9769-18.



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M-143
MONTICELLO CAD DWG "AR"

P&ID PRIMARY CONTAINMENT & ATMOSPHERIC CONTROL SYSTEM

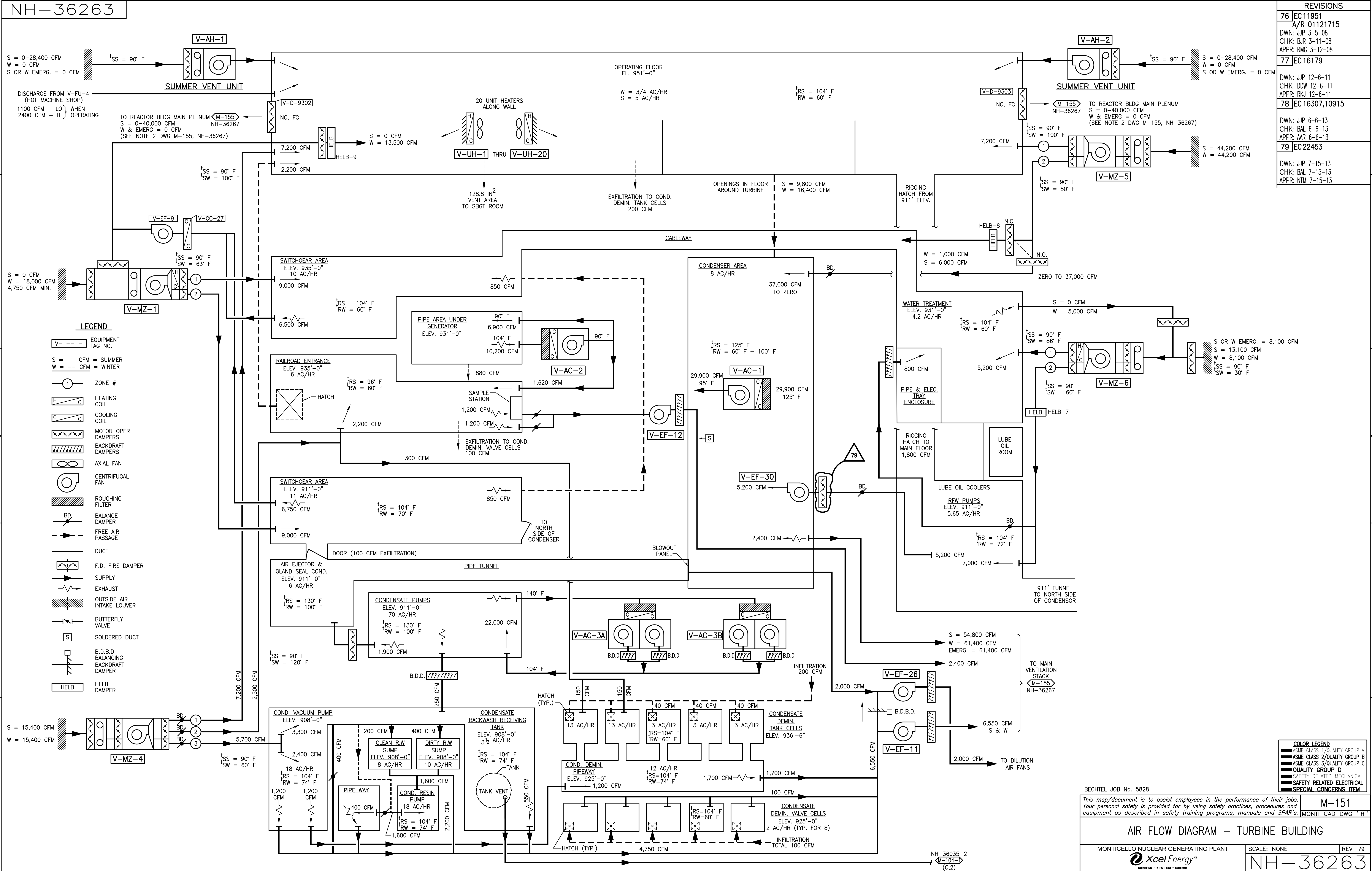
MONTICELLO NUCLEAR GENERATING PLANT

Xcel Energy
NORTHERN STATES POWER COMPANY

SCALE: NONE

REV 79

NH-36258



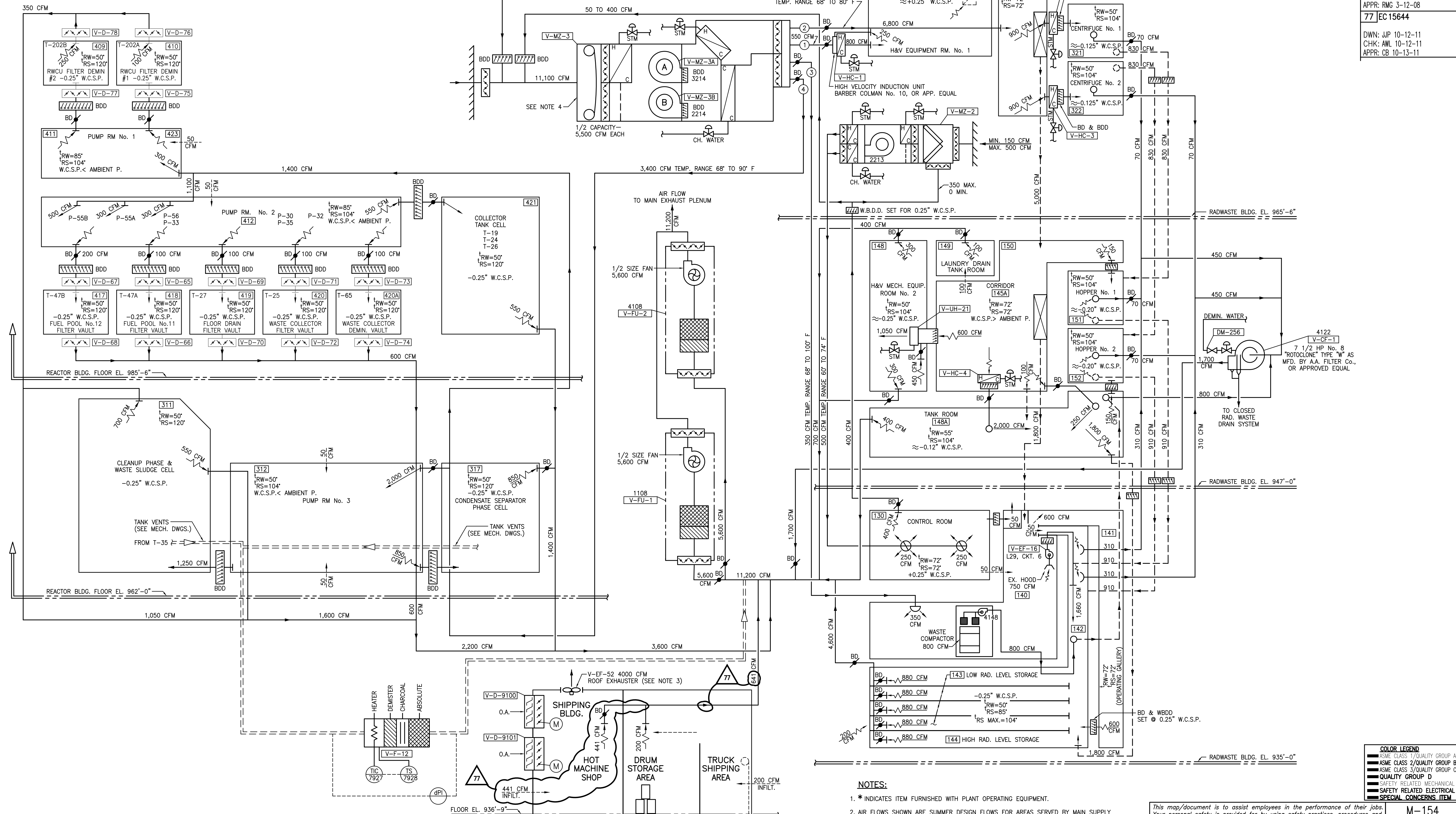
BECHTEL JOB No. 5828

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equipment as described in safety training programs, manuals and SPAR's.

M-151

MONTE CAD DWG "H"

| | |
|----|-------------------|
| 76 | EC 11951 |
| | A/R 01121715 |
| | DWN: JWP 3-5-08 |
| | CHK: BJR 3-11-08 |
| | APPR: RMG 3-12-08 |
| 77 | EC 15644 |
| | DWN: JWP 10-12-11 |
| | CHK: AWL 10-12-11 |
| | APPR: CB 10-13-11 |



NOTES:

- * INDICATES ITEM FURNISHED WITH PLANT OPERATING EQUIPMENT.
- AIR FLOWS SHOWN ARE SUMMER DESIGN FLOWS FOR AREAS SERVED BY MAIN SUPPLY UNIT V-MZ-3 AND MAIN EXHAUST UNITS V-FU-1 AND V-FU-2. THESE UNITS ARE DESIGNED FOR OPERATION AT HALF CAPACITY UNDER WINTER CONDITIONS OR AS REQUIRED IN THE INTERMEDIATE SEASONS.
- REQUIRES SPECIAL PERMISSION TO RUN DUE TO CONCERNS OVER UNMONITORED RADIOACTIVE RELEASES.
- FILTER MAY BE REMOVED AND REINSTALLED BY PROCEDURE.

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| | |
|-------------------------------------|-------------|
| M-154 | |
| MONTICELLO CAD DWG "G" | |
| AIR FLOW DIAGRAM RADWASTE AREA | |
| MONTICELLO NUCLEAR GENERATING PLANT | SCALE: NONE |
| REV 77 | |

| |
|------------------------------|
| COLOR LEGEND |
| ASME CLASS 1/QUALITY GROUP A |
| ASME CLASS 2/QUALITY GROUP B |
| ASME CLASS 3/QUALITY GROUP C |
| QUALITY GROUP D |
| SAFETY RELATED MECHANICAL |
| SAFETY RELATED ELECTRICAL |
| SPECIAL CONCERN ITEM |

NH-36489

REVISIONS

82 EC20419

DWN: JJP 9-24-12

CHK: BAL 9-25-12

APPR: JCC 9-25-12

83 EC18765

DWN: JJP 8-7-13

CHK: BAL 8-12-13

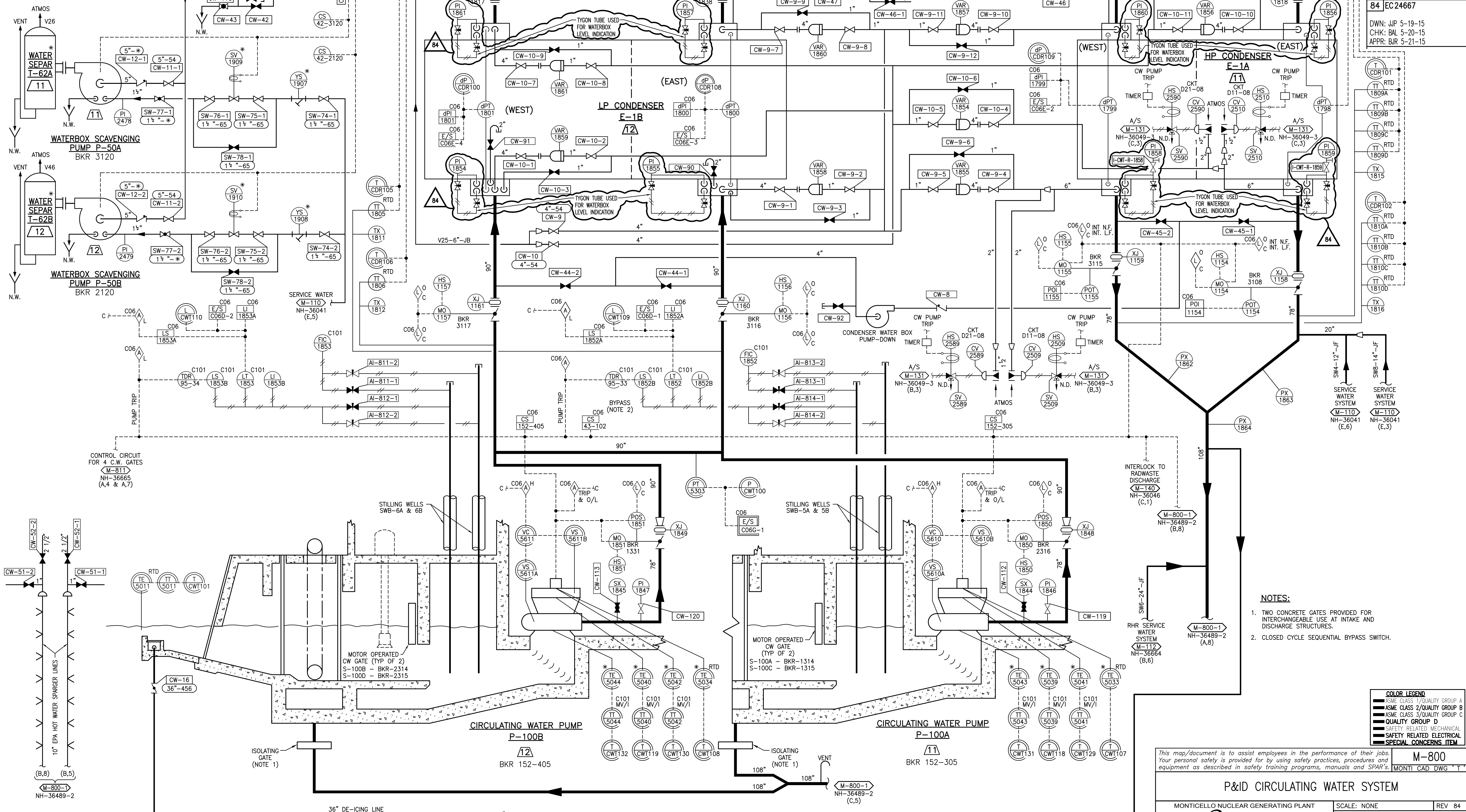
APPR: JCC 8-13-13

84 EC24667

DWN: JJP 5-19-15

CHK: BAL 5-20-15

APPR: BJR 5-21-15



NOTES:

1. TWO CONCRETE GATES PROVIDED FOR INTERCHANGEABLE USE AT INTAKE AND DISCHARGE STRUCTURES.
2. CLOSED CYCLE SEQUENTIAL BYPASS SWITCH.

| COLOR LEGEND | |
|---|------------------------------|
| | ASME CLASS 1/QUALITY GROUP A |
| | ASME CLASS 2/QUALITY GROUP B |
| | ASME CLASS 3/QUALITY GROUP C |
| | QUALITY GROUP D |
| | SAFETY RELATED MECHANICAL |
| | SAFETY RELATED ELECTRICAL |
| | SPECIAL CONCERNS ITEM |

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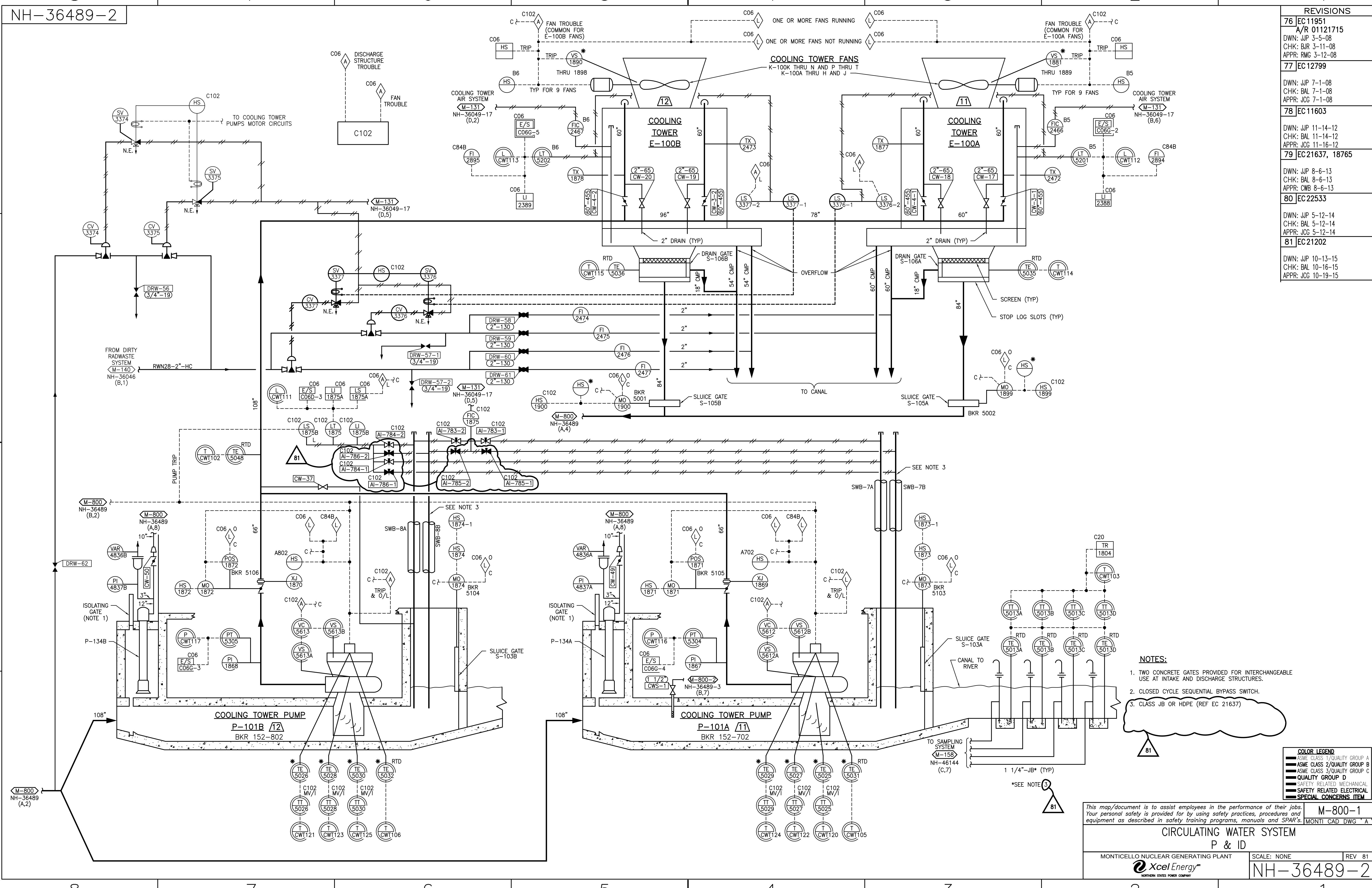
P&ID CIRCULATING WATER SYSTEM

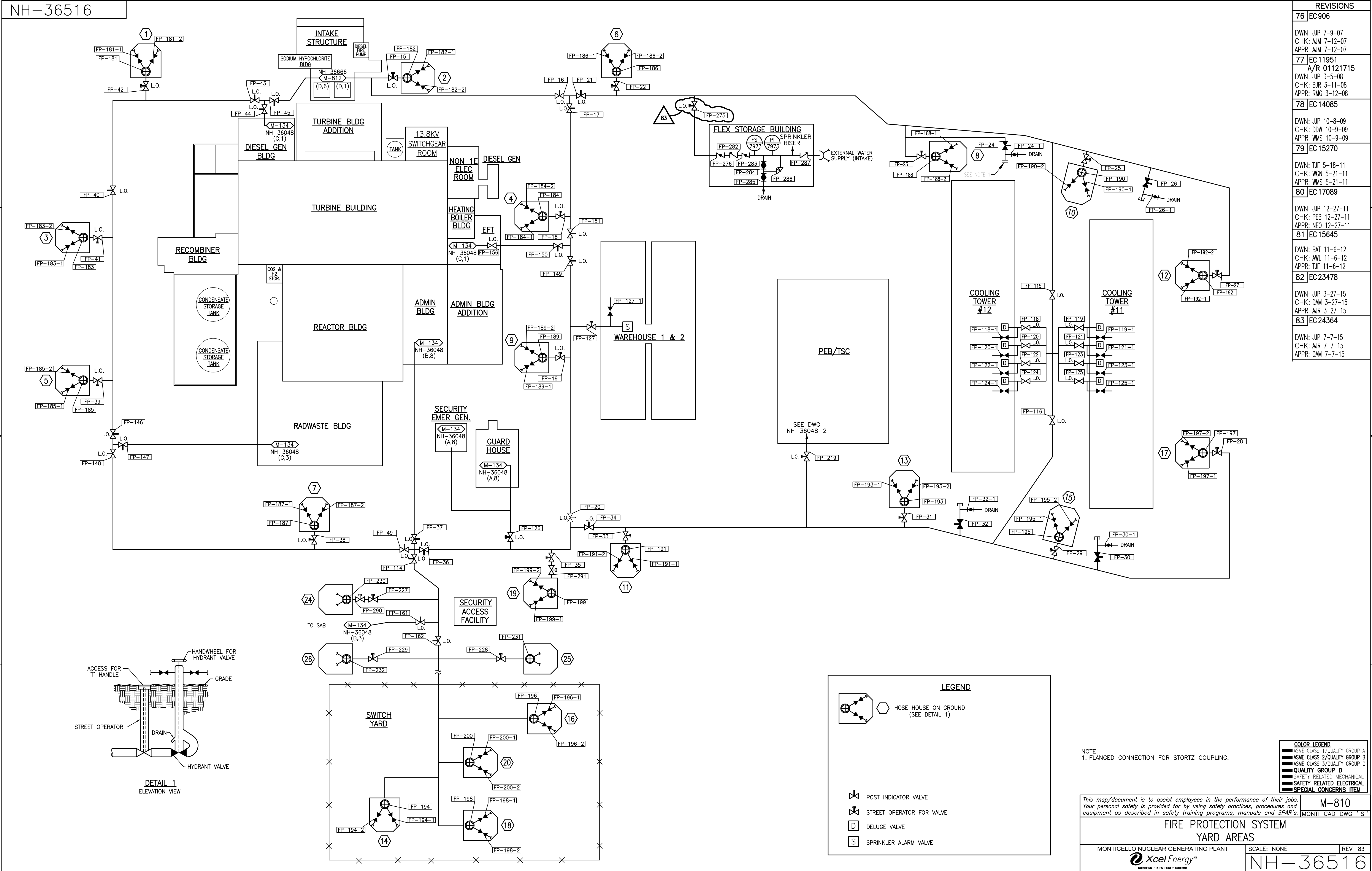
MONTICELLO NUCLEAR GENERATING PLANT SCALE: NONE REV 84

Xcel Energy

NH-36489

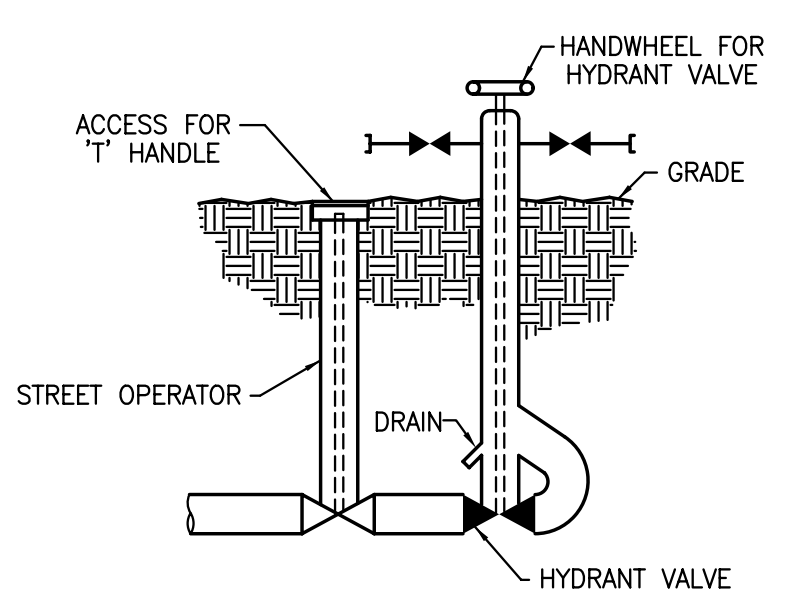
| REVISIONS | |
|-----------|---|
| 76 | EC11951 A/R 01121715 DWN: JJP 3-5-08 CHK: BJR 3-11-08 APPR: RMG 3-12-08 |
| 77 | EC12799 DWN: JJP 7-1-08 CHK: BAL 7-1-08 APPR: JCG 7-1-08 |
| 78 | EC11603 DWN: JJP 11-14-12 CHK: BAL 11-14-12 APPR: JCG 11-16-12 |
| 79 | EC21637, 18765 DWN: JJP 8-6-13 CHK: BAL 8-6-13 APPR: JCG 8-6-13 |
| 80 | EC22533 DWN: JJP 5-12-14 CHK: BAL 5-12-14 APPR: JCG 5-12-14 |
| 81 | EC21202 DWN: JJP 10-13-15 CHK: BAL 10-16-15 APPR: JCG 10-19-15 |





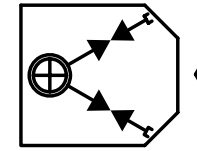
NH-36516


| REVISIONS | |
|--|---------|
| 76 | EC906 |
| DWN: JJP 7-9-07 CHK: AJM 7-12-07 APPR: AJM 7-12-07 | |
| 77 | EC11951 |
| A/R 01121715 DWN: JJP 3-5-08 CHK: BJR 3-11-08 APPR: RMG 3-12-08 | |
| 78 | EC14085 |
| DWN: JJP 10-8-09 CHK: DW 10-9-09 APPR: WMS 10-9-09 | |
| 79 | EC15270 |
| DWN: TJF 5-18-11 CHK: WON 5-21-11 APPR: WMS 5-21-11 | |
| 80 | EC17089 |
| DWN: JJP 12-27-11 CHK: PEB 12-27-11 APPR: NEO 12-27-11 | |
| 81 | EC15645 |
| DWN: BAT 11-6-12 CHK: AWL 11-6-12 APPR: TJF 11-6-12 | |
| 82 | EC23478 |
| DWN: JJP 3-27-15 CHK: DAM 3-27-15 APPR: AJR 3-27-15 | |
| 83 | EC24364 |
| DWN: JJP 7-7-15 CHK: AJR 7-7-15 APPR: DAM 7-7-15 | |





DETAIL 1
ELEVATION VIEW


LEGEND

 HOSE HOUSE ON GROUND
(SEE DETAIL 1)





 POST INDICATOR VALVE

 STREET OPERATOR FOR VALVE

 DELUGE VALVE

 SPRINKLER ALARM VALVE

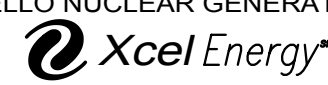
NOTE
1. FLANGED CONNECTION FOR STORTZ COUPLING.

| | |
|---|------------------------------|
| COLOR LEGEND | |
|  | ASME CLASS 1/QUALITY GROUP A |
|  | ASME CLASS 2/QUALITY GROUP B |
|  | ASME CLASS 3/QUALITY GROUP C |
|  | QUALITY GROUP D |
|  | SAFETY RELATED MECHANICAL |
|  | SAFETY RELATED ELECTRICAL |
|  | SPECIAL CONCERNS ITEM |

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equipment as described in safety training programs, manuals and SPAR's.

M-810
MONTICELLO CAD DWG "S"

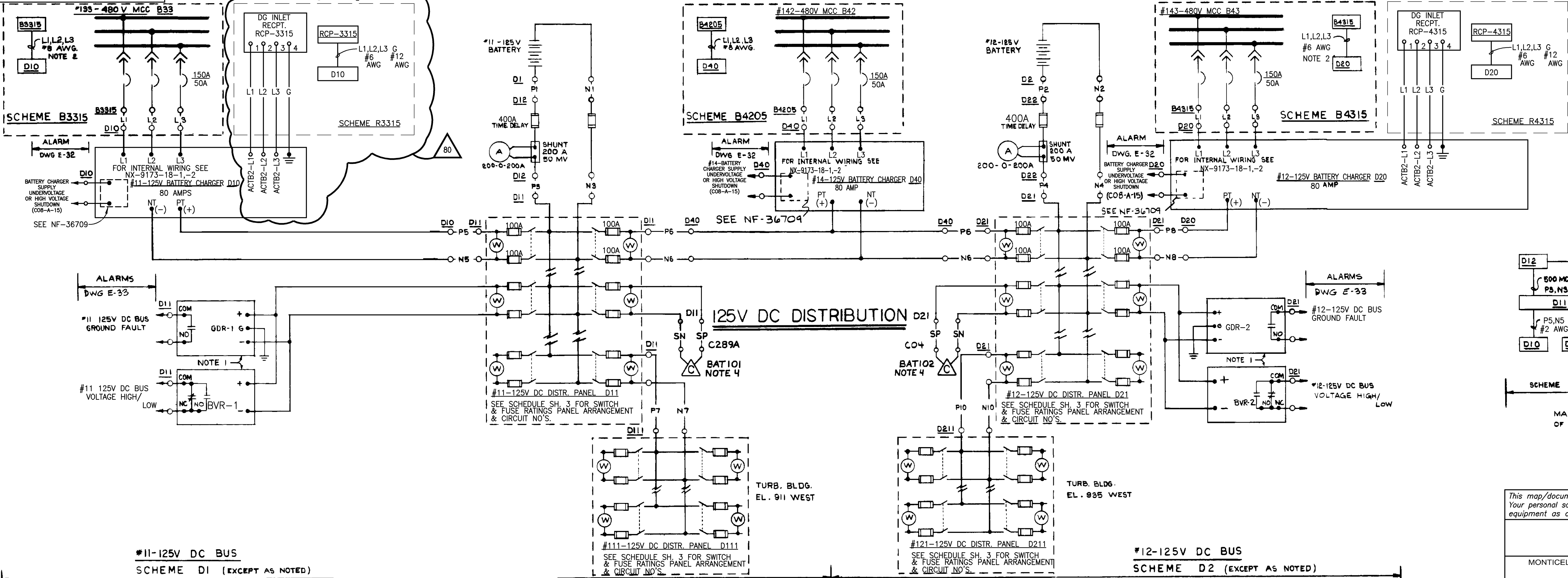
**FIRE PROTECTION SYSTEM
YARD AREAS**


MONTICELLO NUCLEAR GENERATING PLANT
 Xcel Energy
NORTHERN STATES POWER COMPANY

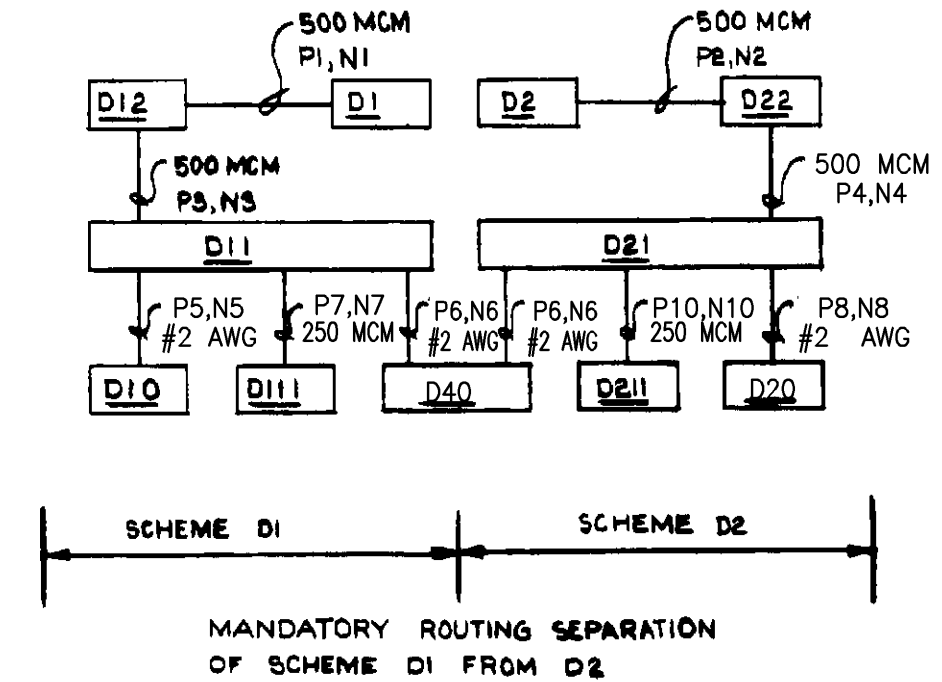
SCALE: NONE
REV 83

NH-36516

NE-36640-2



- ## NOTES:
1. **GROUND DETECTOR (GDR -1 & GDR -2) AND VOLTAGE RELAYS (BVR-1 & BVR-2) ARE INSTALLED ADJACENT TO DISTR. PANELS AND WIRES AS SHOWN.**
 2. **MANDATORY ROUTING SEPARATION OF SCHEME B3315 FROM SCHEME B4315**
 3. **SEE SHEET 3 FOR FUSE TYPE & APPLICATIONS**
 4.  - **COMPUTER INPUT BATXXX - COMPUTER POINT ID (SEE DWG. NE-36723)**



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125V DC DISTRIBUTION ELECTRICAL SCHEME

| | | |
|-------------------------------------|-------------|-------|
| MONTICELLO NUCLEAR GENERATING PLANT | SCALE: NONE | REV 8 |
|-------------------------------------|-------------|-------|



NE-36640-2

| REVISIONS | |
|--------------------|----------|
| 76 | EC 720 |
| DWN: JJP 8-14-08 | |
| CHK: PEB 8-15-08 | |
| APPR: RES 8-15-08 | |
| 77 | EC 12877 |
| DWN: JJP 12-5-08 | |
| CHK: RES 12-9-08 | |
| APPR: MFP 12-10-08 | |
| 78 | EC 13284 |
| DWN: JJP 4-8-10 | |
| CHK: BAL 4-8-10 | |
| APPR: RES 4-8-10 | |
| 79 | EC 25350 |
| DWN: NJM 4-6-15 | |
| CHK: AJR 4-6-15 | |
| APPR: NJF 4-6-15 | |
| 80 | EC 23475 |
| DWN: JJP 4-9-15 | |
| CHK: BAL 4-9-15 | |
| APPR: DJS 4-9-15 | |

PERMANENT NOTE:
ANY ADDITIONS OR CHANGES TO THIS DRAWING MUST ALSO BE MADE ON
NH-105940 FOR USE WITH SPARE GENERATOR TRANSFORMER INSTALLATION

| REVISIONS | |
|-------------------|-----------------|
| 84 | EC 21152, 21159 |
| DWN: BAT 5-23-13 | |
| CHK: SMA 5-23-13 | |
| APPR: CTP 5-23-13 | |

#11-125V DC DISTRIBUTION PANEL D11 (F.P. #5828-E12-1)

| SCHEME NUMBER | CKT NO | SWITCH RATING AMPS | FUSE AMPS NOTE 2 | DESCRIPTION | LOC. | ROUTING SEPERATION NOTE-1 | WIRE SIZE |
|---------------|--------|--------------------|------------------|---|---------|---------------------------|-----------|
| D1 | 1 | 100 | 100 | #11-125V BATTERY CHARGER | | | #2 |
| D1 | 2 | 100 | 100 | #14-125V BATTERY CHARGER | | | #2 |
| D1103 | 3 | 30 | 30 | RECIRC. PUMP MG SET G-200A CONTROL PNL 2-184-11A | Z4-11A | D2103 | #10 |
| D1104 | 4 | 30 | 30 | FIRE PROTECTION | C20 | - | #10 |
| D1105 | 5 | 30 | 30 | DIV I ATWS CABINET | 9-95 | D2105 | #10 |
| D1106 | 6 | 30 | 30 | REACTOR WTR CLEANUP & RECIRC BENCH BOARD | C04 | D2106 | #10 |
| D1107 | 7 | 30 | 30 | PLANT EVACUATION SIREN CONTROL | N3106 | - | #10 |
| D1108 | 8 | 30 | 30 | FEEDWATER & CONDENSATE BENCH BOARD | C06 | - | #10 |
| D1109 | 9 | 30 | 30 | GENERATOR & AUX. POWER BENCH BOARD | C08 | D2109 | #10 |
| D1110 | 10 | 30 | 30 | CHANNEL A RHR, CORE SPRAY & AUTO BLOWDOWN RELAY VERT. BOARD | C32 | D2112 | #10 |
| D1111 | 11 | 30 | 30 | CHANNEL A PRIMARY ISOL. AND REACTOR PROT. SYS VERT BOARD | C15 | D2111 | #10 |
| D1112 | 12 | 30 | 30 | RCIC RELAY VERTICAL BOARD | C30 | - | #10 |
| D1113 | 13 | 30 | 30 | GEN UNDERFREQ. PROT. CAB. | C254 | | #10 |
| D1114 | 14 | 30 | 30 | SPARE | | | |
| D1115 | 15 | 30 | 30 | TIP (REACTOR NEUTRON MAPPING) CONTROL CABINET | C13 | - | #10 |
| D1116 | 16 | 30 | 30 | ATWS INVERTER A | - | D2114 | #10 |
| D1117 | 17 | 30 | 15 | INBOARD ISOLATION VALVE RELAY PANEL | C41 | D2117 | #10 |
| D1118 | 18 | 30 | 15 | OVER/UNDER VOLTAGE, GND. DET. RELAY | - | - | #14 |
| D1119 | 19 | 60 | 60 | TURBINE BENCH BOARD | C07 | - | #6 |
| D1120 | 20 | 60 | 60 | TURBINE-GENERATOR METER & RELAY BOARD | C31 | - | #6 |
| D1121 | 21 | 60 | 60 | EMERGENCY LIGHTING PANEL (SEE DWG E-353) | - | - | - |
| D1122 | 22 | 60 | 5 | COMPUTER INPUT BAT. 101 | | | |
| D1123 | 23 | 60 | 60 | #11 - 13.8KV SWGR & 2R RELAYING | 152-101 | D2123 | #6 |
| D1124 | 24 | 60 | 30 | AUTO TRANSFER RELAYS | C31 | - | #8 |
| | | | | SPACE | | | |
| D1 (SEE SH 2) | 28 | 200 | 200 | #111-125V-DC DISTRIBUTION PANEL | | | |

#12-125V DC DISTRIBUTION PANEL D21 (F.P. #5828-E12-1)

| SCHEME NUMBER | CKT NO | SWITCH RATING AMPS | FUSE AMPS NOTE 2 | DESCRIPTION | LOC. | ROUTING SEPERATION NOTE-1 | WIRE SIZE |
|---------------|--------|--------------------|------------------|---|-----------|---------------------------|-----------|
| D2 | 1 | 100 | 100 | #12-125V BATTERY CHARGER | | | #2 |
| D2 | 2 | 100 | 100 | #14-125V BATTERY CHARGER | | | #2 |
| D2103 | 3 | 30 | 30 | RECIRC. PUMP MG SET G-200B CONTROL PNL 2-184-11B | Z4-11B | D1103 | #10 |
| D2104 | 4 | 30 | 30 | INSTRUMENT LAB | J265A | - | #10 |
| D2105 | 5 | 30 | 30 | REACTOR & CONTAINMENT CLG & ISOL. BENCH BOARD | C03 | D1105 | #10 |
| D2106 | 6 | 30 | 30 | DIV II ATWS CABINET | 9-96 | D1105 | #10 |
| D2107 | 7 | 30 | 30 | REACTOR CONTROL BENCH BOARD | C05 | - | #10 |
| D2108 | 8 | 30 | 30 | FEEDWATER & CONDENSATE BENCH BOARD | C06 | - | #10 |
| D2109 | 9 | 30 | 30 | GENERATOR & AUX. POWER BENCH BOARD | C08 | D1109 | #10 |
| D2110 | 10 | 30 | 30 | CGCS DIV II | C285B | D1114 | #10 |
| D2111 | 11 | 30 | 30 | CHANNEL B PRIMARY ISOL. AND REACTOR PROT. SYS VERT BOARD | C17 | D1111 | #10 |
| D2112 | 12 | 30 | 30 | CHANNEL B RHR, CORE SPRAY & AUTO BLOWDOWN RELAY VERT. BOARD | C33/C32 | D1110 | #10 |
| D2113 | 13 | 30 | 30 | RADWASTE PANELS | C84A/C84B | - | #10 |
| D2114 | 14 | 30 | 30 | ATWS INVERTER B | 1- | D1116 | #10 |
| D2115 | 15 | 30 | 30 | HPCI RELAY VERTICAL BOARD | C39 | | #10 |
| D2116 | 16 | 30 | 30 | TURBINE PLANT INST. VERTICAL BOARD | C20 | | #10 |
| D2117 | 17 | 30 | 15 | OUTBOARD ISOLATION VALVE RELAY PANEL | C292 | D1117 | #14 |
| D2118 | 18 | 30 | 15 | OVER/UNDER VOLTAGE, GND. DET. RELAY | - | - | #14 |
| D2119 | 19 | 60 | 60 | TURBINE BENCH BOARD | C07 | - | #6 |
| D2120 | 20 | 60 | 60 | TURBINE-GENERATOR METER & RELAY BOARD | C31 | - | #6 |
| D2121 | 21 | 30 | 30 | SPARE | | | |
| D2122 | 22 | 60 | 5 | COMPUTER INPUT BAT. 102 | | | |
| D2123 | 23 | 60 | 60 | #12 - 13.8KV SWGR & 1R RELAYING | 152-201 | D1123 | #6 |
| | 24 | 60 | 60 | SPACE | | | |
| | | | | SPACE | | | |
| | | | | SPACE | | | |
| | | | | SPACE | | | |
| | | | | SPACE | | | |
| D2 (SEE SH 2) | 28 | 200 | 200 | #121-125V-DC DISTRIBUTION PANEL | | | |

#111-125V DC DISTRIBUTION PANEL D111 (F.P. #5828-E12-2)

| SCHEME NUMBER | CKT NO | SWITCH RATING AMPS | FUSE AMPS NOTE 2 | DESCRIPTION | LOC. | ROUTING SEPERATION NOTE-1 | WIRE SIZE |
|---------------|--------|--------------------|------------------|--|-------|---------------------------|-----------|
| D11101 | 1 | 30 | 15 | CIRC WATER EXCITER RELAYS | E50 | | #10 |
| | 2 | 30 | 30 | SPARE | | | |
| D11103 | 3 | 30 | 30 | GENERATOR H2 COOLING PANEL | C83 | | #10 |
| D11104 | 4 | 30 | 30 | INTAKE CIRC WATER CONTROL PANEL | C101 | | #10 |
| D11105 | 5 | 30 | 15 | 2R-AUX TRANS CONTROL | X02 | | #6 |
| D11106 | 6 | 30 | 15 | OPTICAL ISOLATORS-DIV I | C243A | | #10 |
| D11107 | 7 | 60 | 60 | #101-480V LOAD CENTER | B1 | | #6 |
| D11108 | 8 | 60 | 60 * | #103-480V LOAD CENTER NORMAL | B3 | | #6 |
| D11109 | 9 | 60 | 60 | #107-480V LOAD CENTER | C325 | | #6 |
| D11110 | 10 | 60 | 60 * | #104-480V LOAD CENTER STANDBY (NOTE 3) | B4 | | #6 |
| D11111* | 11 | 60 | 60 | DIESEL GEN #11 CONTROL PANEL | C91 | D21111 | #6 |
| D11112* | 12 | 60 | 60 | DIESEL GEN #12 CONTROL PANEL | C92 | D21112 | #6 |
| D11113 | 13 | 60 | 60 | 4.16 KV BREAKER INSPECTION BOX | A10 | | #6 |
| D11114 | 14 | 60 | 60 | #109-480V LOAD CENTER | B9 | | #6 |
| | 15 | 60 | 35 | SPARE | | | |
| | 16 | 60 | 35 | SPARE | | | |
| D11117 | 17 | 100 | 70 | SPARE | | | |
| D11118 | 18 | 100 | 70 | #13-4.16KV SWGR | A307 | D21118 | #6 |
| D11119 | 19 | 100 | 70 | #15-4.16KV SWGR NORMAL | A308 | D21120 | #6 |
| D11120 | 20 | 100 | 70 | #16-4.16KV SWGR STANDBY (NOTE 3) | A408 | | #6 |
| D11121 | 21 | 100 | 70 | #1-MAIN GENERATOR EXCITATION | E304 | | #6 |
| D11122 | 22 | 100 | 100 | DIESEL GENERATOR #11 FIELD FLASHING | C91 | D21122 | #2 |
| | | | | SPACE | | | |
| | | | | SPACE | | | |
| | | | | SPACE | | | |
| | | | | SPACE | | | |
| | | | | SPACE | | | |
| | | | | SPACE | | | |

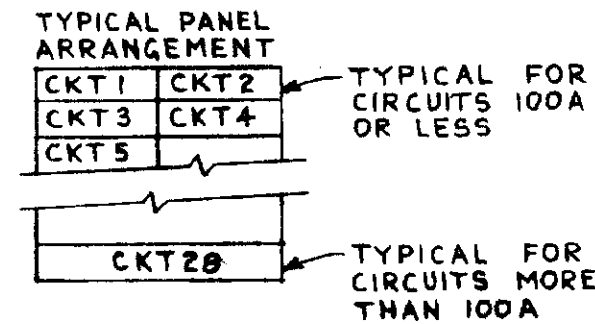
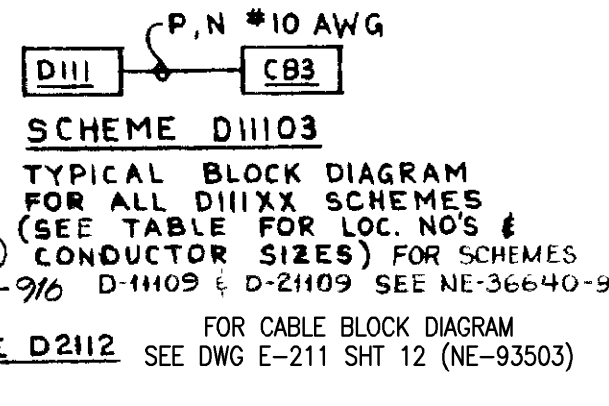
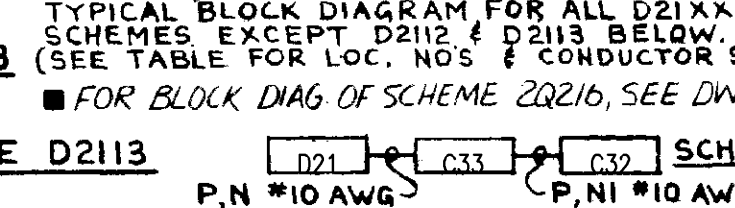
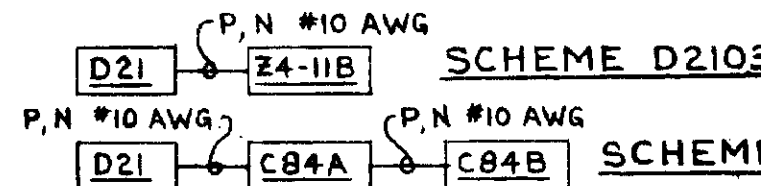
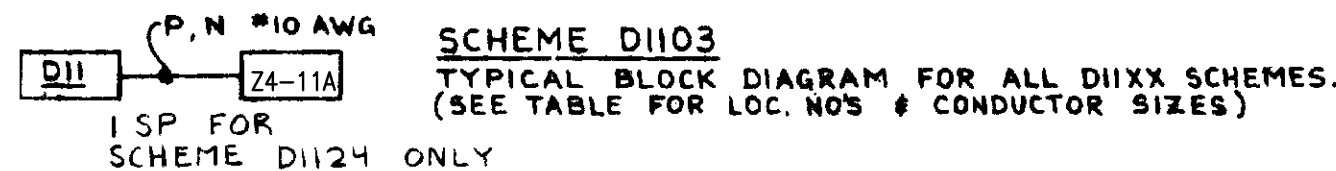
#121-125V DC DISTRIBUTION PANEL D211 (F.P. #5828-E12-2)

| SCHEME NUMBER | CKT NO | SWITCH RATING AMPS | FUSE AMPS NOTE 2 | DESCRIPTION | LOC. | ROUTING SEPERATION NOTE-1 | WIRE SIZE |
|---------------|--------|--------------------|------------------|--|------|---------------------------|-----------|
| D21101 | 1 | 30 | 15 | CIRC WATER EXCITER RELAYS | E60 | | #10 |
| D21102 | 2 | 30 | 30 | 1R RES TRANS CONTROL | X03 | D11105 | #6 |
| | 3 | 30 | 30 | SPARE | | | |
| D21104 | 4 | 30 | 30 | #1-MAIN TRANS CONTROL - CABINET C-520 | X01 | | #10 |
| D21105 | 5 | 30 | 15 | SPARE | | | |
| D21106 | 6 | 30 | 15 | SPARE | | | #10 |
| D21107 | 7 | 60 | 60 | #102-480V LOAD CENTER | B2 | | #6 |
| D21108 | 8 | 60 | 60 * | #104-480V LOAD CENTER NORMAL | B4 | D11108 | #6 |
| D21109 | 9 | 60 | 60 | #108-480V LOAD CENTER | C326 | | #6 |
| D21110 | 10 | 60 | 60 * | #103-480V LOAD CENTER STANDBY (NOTE 3) | B3 | | #6 |
| D21111* | 11 | 60 | 60 | DIESEL GEN #12 CONTROL PANEL | C92 | D11111 | #6 |
| D21112* | 12 | 60 | 60 | DIESEL GEN #11 CONTROL PANEL | C91 | D11112 | #6 |
| D21113 | 13 | 60 | 35 | 4.16 KV BREAKER INSPECTION BOX | A20 | | #6 |
| | 14 | 60 | 60 | SPARE | B7 | | #6 |
| | 15 | 60 | 35 | SPARE | | | |
| | 16 | 60 | 35 | SPARE | | | |
| D21118 | 18 | 100 | 70 | SPARE | | | |
| D21118 | 18 | 100 | 70 | #14-4.16KV SWGR | A407 | D11118 | #6 |
| D21119 | 19 | 100 | 70 | #15-4.16KV SWGR STANDBY (NOTE 3) | A308 | | #6 |
| D21120 | 20 | 100 | 70 | #16-4.16KV SWGR NORMAL | A408 | D11119 | #6 |
| | 21 | 100 | 70 | SPARE | | | |
| D21122 | 22 | 100 | 100 | DIESEL GENERATOR #12 FIELD FLASHING | C92 | D11122 | #2 |
| | | | | SPACE | | | |
| | | | | SPACE | | | |
| | | | | SPACE | | | |
| | | | | SPACE | | | |
| | | | | SPACE | | | |
| | | | | SPACE | | | |

NOTE:
CURRENT ON CKT D2128 LIMITED TO 200 AMPS DUE TO FIREPROOFING OF CONDUIT. SEE ENGINEERING EVALUATION 86-044

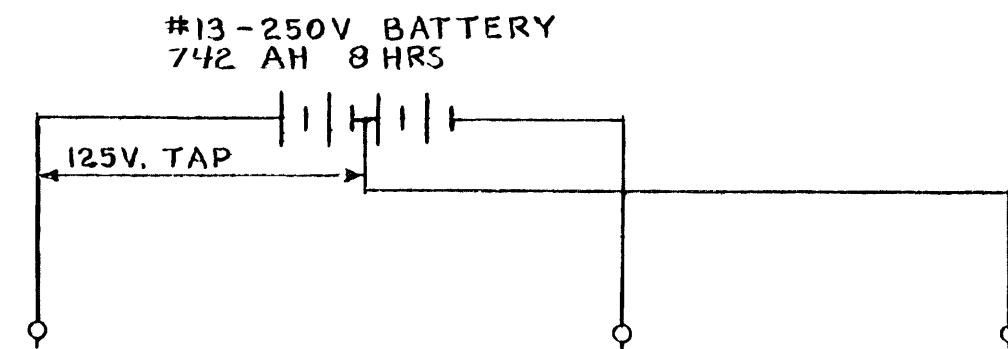
NOTES:

- MANDATORY ROUTING SEPERATION FROM SCHEME NUMBERS LISTED.
- MAIN BATTERY FUSES SHALL BE DUAL ELEMENT TIME DELAY.
- FIELD TO DISCONNECT STAND-BY 125 VDC CONTROL POWER TO 4KV BUS AND TAPE THE LEADS. THIS DELETION IS PER AEC/DRL-GE-NSP AGREEMENT AT WASHINGTON MEETING DATED 11-4-69. THE STAND-BY SOURCE LEADS NOT TO BE CONNECTED WITHOUT EXPRESSED ORDERS FROM PLANT SUPERINTENDENT.

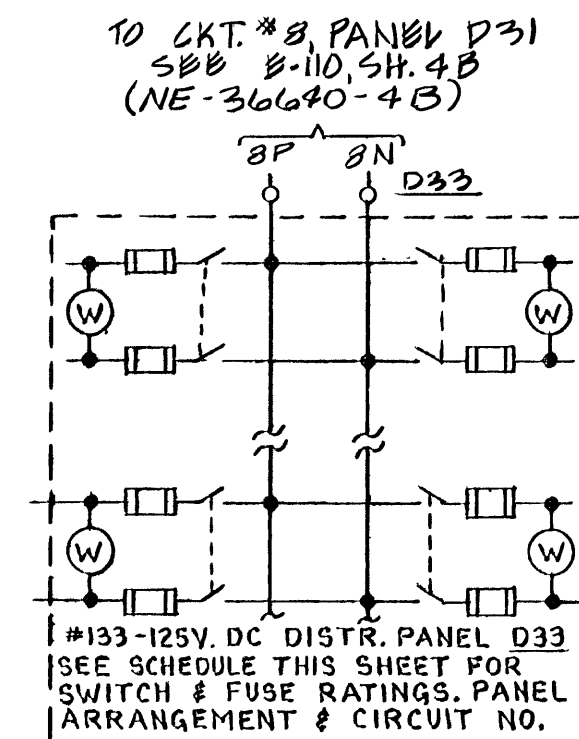


(* SCHEMES D11111, D11112, D21111 & D21112 CONTINUED ON E-103, SH 3)
* 60 AMP. TR60R GOULD-SHAWMUT OR EQUIVALENT.

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D3A & D3B
*13-250V & 125V DC DISTRIBUTION (CHANNEL 1)
(SCHEMES SHOWN ON DWG. #110, SH. 4A, 4B, 4C)



#13-250V DC DISTRIBUTION PANEL D31

| SCHEME NO | CKT NO | BREAKER | | DESCRIPTION | LOC. | WIRE SIZE |
|-----------|--------|---------|-----|------------------------------------|-------|-----------|
| | | AF | AT | | | |
| D3 | 1 | 400 | 225 | 125V BATTERY CHARGER #D54 | D54 | 2-#10 |
| D3 | 2 | 400 | 225 | 125V BATTERY CHARGER #D52 | D52 | 2-#10 |
| D3 | 3 | 400 | 225 | BATTERY CHARGER #D54 | D54 | — |
| D3 | 4 | 400 | 225 | BATTERY CHARGER #D53 | D53 | 2-#10 |
| | 5 | 150 | 35 | SPARE | | |
| D3106 | 6 | 150 | 35 | PLANT EVACUATION SIREN POWER | N3106 | #10 |
| | 7 | 150 | 35 | SPARE | | |
| D3 | 8 | 150 | 100 | 125V DC DISTRIBUTION PANEL D33 | D33 | #10 |
| | 9 | 400 | 150 | SPARE | | |
| D3110 | 10 | 400 | 225 | #131-250V. MCC (RCIC) | D311 | 250MCM |
| D3111 | 11 | 400 | 225 | #133-250V. MCC (REACT. BLDG. EAST) | D313 | 250MCM |
| D3112 | 12 | 400 | 225 | DIVISION I 120VAC UPS Y71 | Y71 | 250MCM |
| | 13 | 400 | 250 | SPARE | | |
| | 14 | — | — | SPACE | | |
| | 15 | — | — | SPACE | | |
| | 16 | — | — | SPACE | | |

SCHEME D3106
TYPICAL BLOCK DIAGRAM
(SCHEME D3106 THROUGH D3113)
SEE PANEL SCHEDULE THIS SH.
FOR ROUTING SEPARATION
REQUIREMENTS.

SCHEME D3301
TYPICAL BLOCK DIAGRAM
(SCHEME D3301 AND D3302)
SEE PANEL SCHEDULE THIS SH.
FOR MANDATORY ROUTING
SEPARATION REQUIREMENTS.

#133-125 DC DISTRIBUTION PANEL D33 (F.P. #5828-E12-6)

| SCHEME NO. | CKT NO. | SWITCH RATING AMPS | FUSE RATING AMPS | DESCRIPTION | LOC. | WIRE SIZE | MANDATORY ROUTING SEPARATION REQUIREMENT |
|------------|---------|--------------------|------------------|-----------------------------------|-------|-----------|--|
| D3301 | 1 | 30 | 30 | #131-250V DC MCC | D311 | #10 | — |
| D3302 | 2 | 30 | 30 | #133-250V DC MCC | D313 | #10 | — |
| D3303 | 3 | 30 | 30 | ECCS ANALOG TRIP UNIT | C303A | #10 | — |
| D3304 | 4 | 30 | 30 | SRV LOW LOW SET CONTROL DIV. I | C253A | #10 | SEE NOTE 1 |
| D3305 | 5 | 60 | 35 | ACB 52-3300 CONT. POWER @ MCC133B | B3300 | #6 | — |
| | 6 | 30 | 30 | SPARE | | | — |
| | 7 | 30 | 15 | SPARE | | | — |
| | 8 | 30 | 15 | SPARE | | | — |

NOTES

1. SEPARATION SHALL BE IN ACCORDANCE WITH
DESIGN SPEC. NSP48-034.

D33 PANEL ARRANGEMENT

| | |
|-------|-------|
| CKT 1 | CKT 2 |
| CKT 3 | CKT 4 |
| CKT 5 | CKT 6 |
| CKT 7 | CKT 8 |

SCHEME D3303
P.N. (#10 AWG)
13P

SCHEME D3305
P.N. (#6 AWG)
3P1A

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E-110 SH. 4
MONTI CAD DWG 'K'

250V DC DISTRIBUTION & PANEL SCHEDULE D31, D33

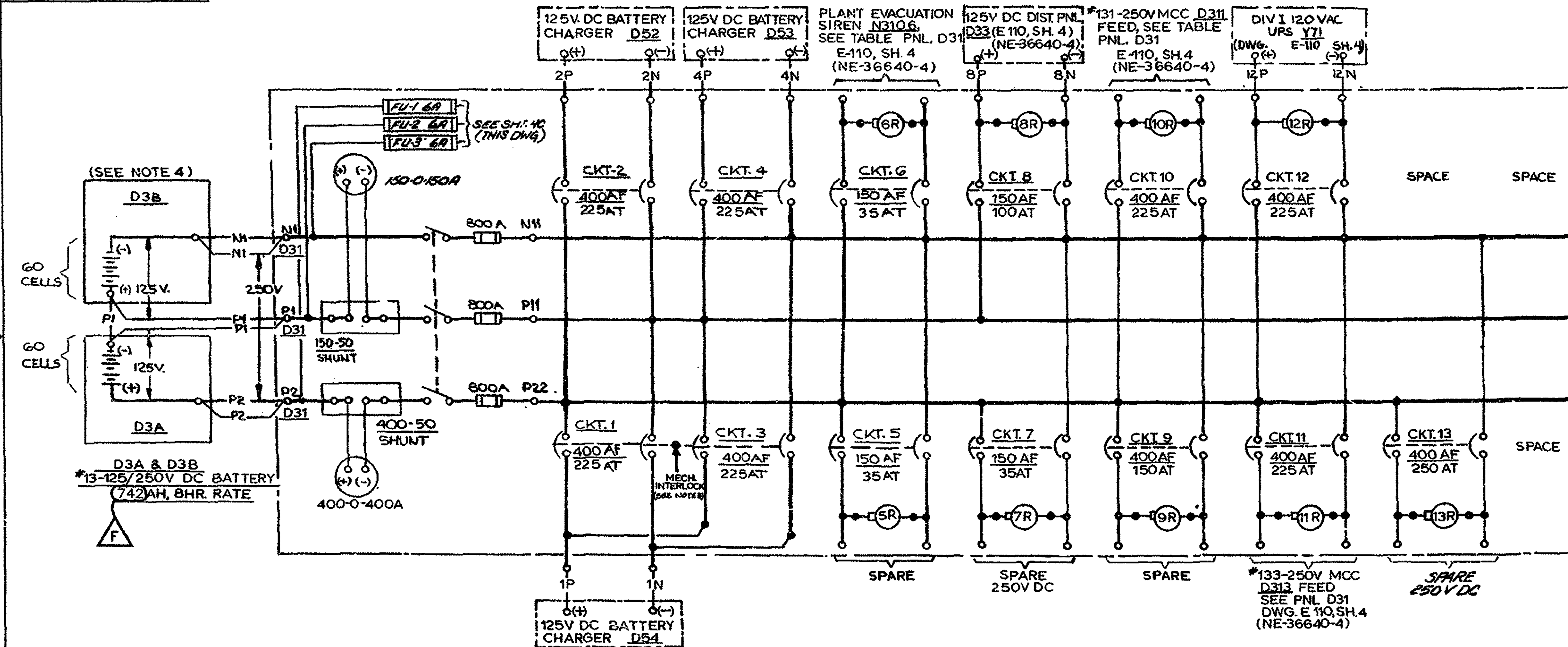
MONTICELLO NUCLEAR GENERATING PLANT



SCALE: NONE

REV 76

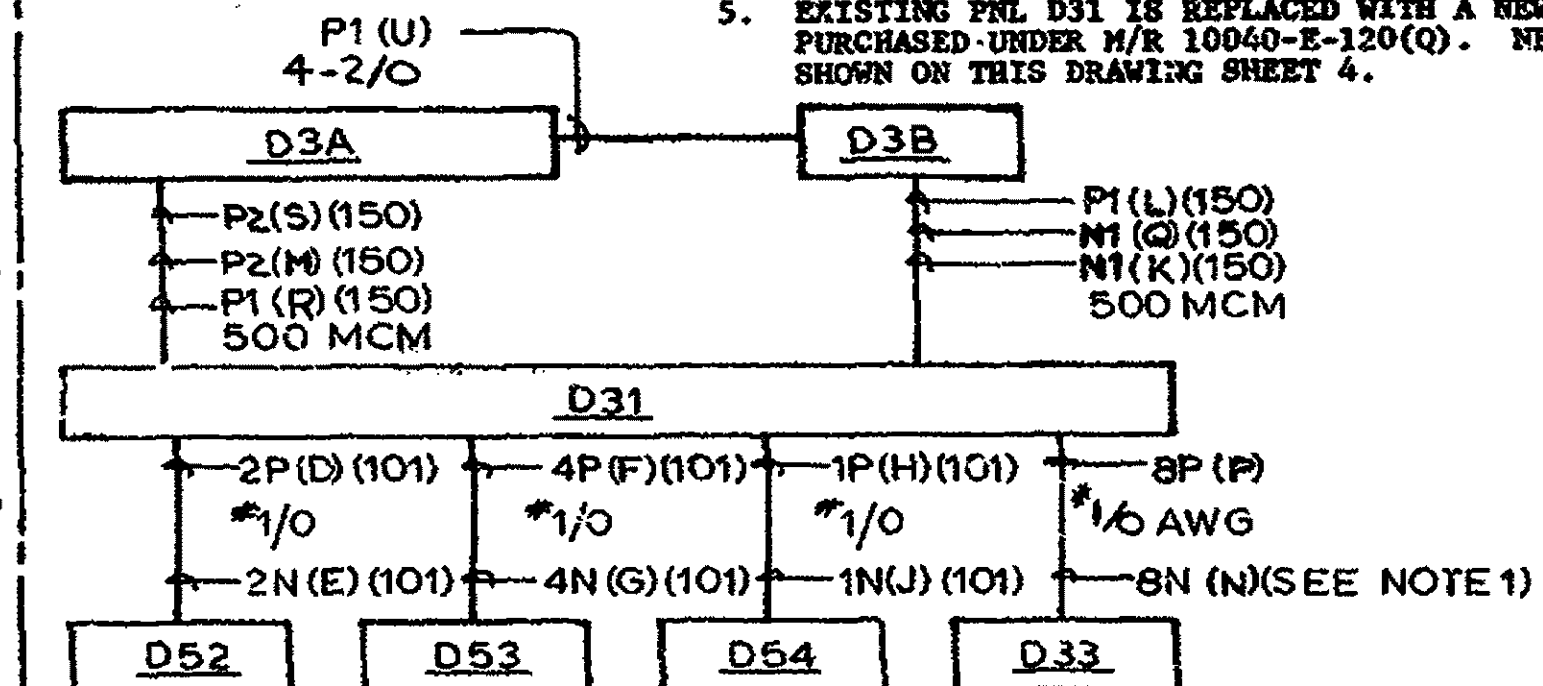
NE-36640-4



125/250V DC DISTRIBUTION CABINET D31
SCHEME NO. D3 (CHANNEL 1)



NOTES:

1. FIELD TO RETAG, REROUTE AND RECONNECT EXISTING CABLE SCHEME D3 FROM PANEL D3 TO PANEL D34 AS SHOWN FROM PANEL D31 TO PANEL D33 WIRE NUMBERS 8P AND 8N. FIELD TO ENSURE THAT EXISTING CABLE IS FREE OF DEFECTS AND SUITABLE FOR USE.
2. CABLES BETWEEN PANEL D31 AND BATTERY CHARGERS D52, D53 AND D54 ARE NEW CABLES. CABLES BETWEEN BATTERIES D3A, D3B AND PNL D31 MAY REQUIRE NEW CABLES IN CASE THE EXISTING CABLES ARE DAMAGED OR DOES NOT HAVE ENOUGH LENGTH. TAG ALL CABLES USING THIS DRAWING AND E-110.
3. CIRCUITS #1 AND #3 SHALL BE MECHANICALLY INTERLOCKED WITH A "WALKING BAR" (KEY TYPE LOCK NOT ACCEPTABLE) SO THAT IF ONE BREAKER IS CLOSED, THE OTHER IS BLOCKED IN THE OPEN POSITION.
4. FIELD TO RETAG BATTERY D3 AS D3A AND D3B AS SHOWN.
5. EXISTING PNL D31 IS REPLACED WITH A NEW PNL D31 BEING PURCHASED UNDER M/R 10040-E-120(Q). NEW PANEL TABLE SHOWN ON THIS DRAWING SHEET 4.



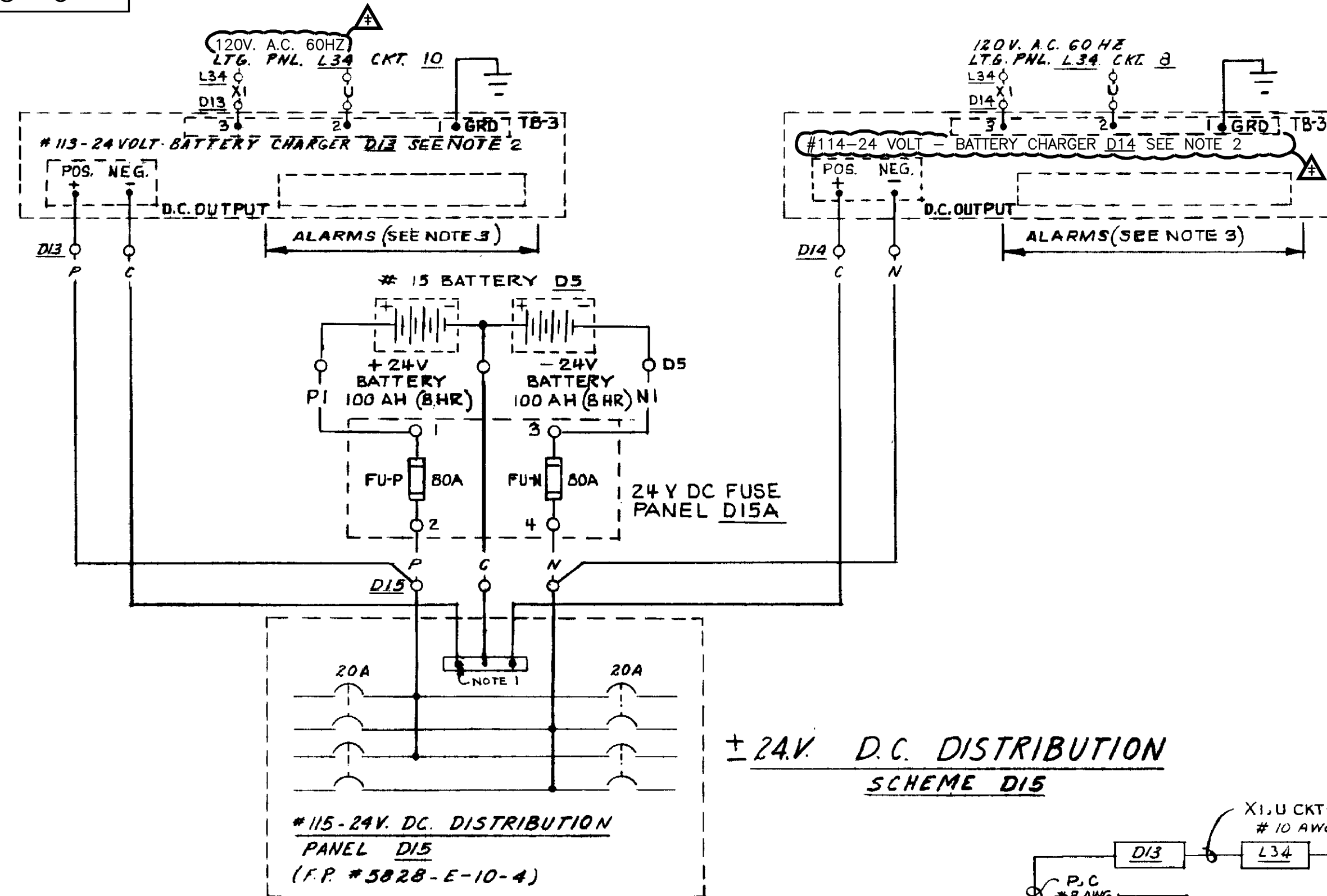
SCHEME D3
CLASS 1E CABLES
(CHANNEL 1)

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| | | | | | | | | | | | | | | |
|--|--|--|------|--|----|--|---|--|------|--|---|--|-----|--|
|  MONTICELLO NUCLEAR GENERATING PLANT  | E-110 SH.4B MONTICELLO NUCLEAR GENERATING PLANT 125/250V DC DISTRIBUTION CAB. D31 SCHEME NO. D3 | | | | | | | | | | | | | |
| | SIGNIFICANT NUMBER | | 8700 | | RX | | 1 | | 3200 | | 1 | | 125 | |
| | GROUP | | 1 | | 2 | | 3 | | 4 | | 5 | | 6 | |
| | NORTH STAR POWER COMPANY MINNEAPOLIS | | | | | | | | | | | | | |
| SCALE: NONE | | | | | | | | | | | | | | |
| REV F | | | | | | | | | | | | | | |
| NF-36640-4-2 | | | | | | | | | | | | | | |

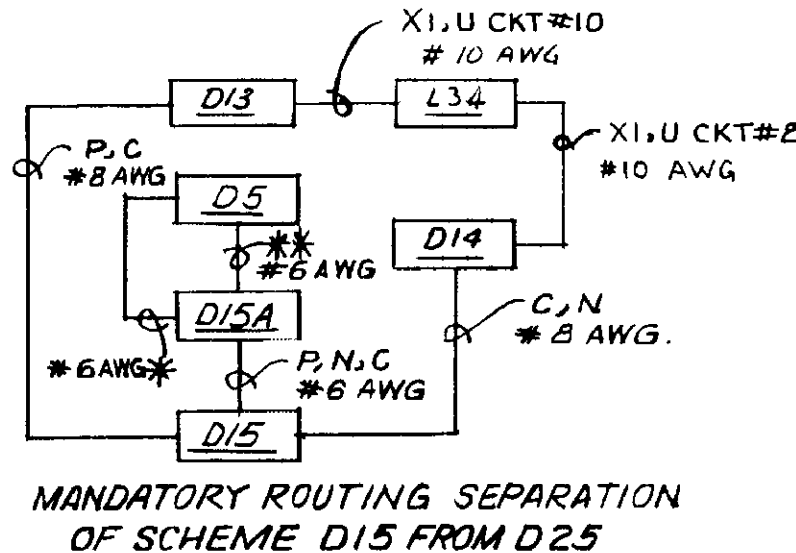
| REVISIONS | |
|-----------|--|
| D | AS-BUILT: REPLACEMENT/UPGRADE DIV. 1 250V DC BATTERY. BATTERY CAPACITY INCREASED. BATTERY RACK LENGTH INCREASED & GROUND DETECTION PANEL RELOCATED. REVISED SHTS. 4-2 & 4-3 PER DWR: MO-87-259 |
| E | AS-BUILT: NON-CLASS 1E POWER SUPPLY REVISED SHEETS 4 AND 4-2 PER CRR/DWR: MO-89-116 |
| F | AS-BUILT: REVISED TO REFLECT THE BATTERY UPGRADE PROJECT |

PER DWR: MO-04-0228
DWN: JUP 11-1-04
CHK: JDS 11-8-89
MOD: 892006
FILMED: 11-12-04



| SCHEME NO. | 120 V. AC. POWER SUPPLY | CHARGER NO. | ± 24V. BATTERY | LOCATIONS |
|------------|-------------------------|-------------------|----------------|---------------------|
| D15 | PNL. L34 PNL. L34 | CKT. 10 CKT. 3 | * 113 * 114 | D13 D14 D5 D15 D15A |
| D25 | PNL. L38 PNL. L38 | CKT. 9 CKT. 24 | * 123 * 124 | D23 D24 D4 D25 D25A |

| | | |
|----|-------|--------|
| | D15 | D25 |
| * | PI, C | PI, NI |
| ** | NI | C |



#115-24V. DC. DISTRIBUTION PANEL D15 (F.P. #5828-E-10-4)

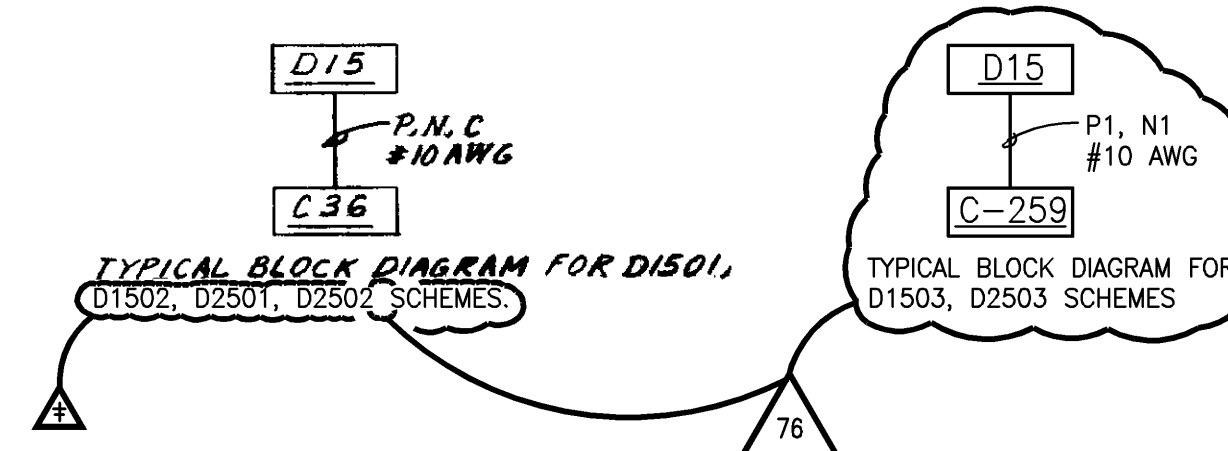
| SCHEME NO. | CKT. NO. | BKR. RATING AMPS | DESCRIPTION | LOCATION | ROUTING SEPARATION FROM SCHEME | WIRE SIZE |
|------------|----------|------------------|--|----------|--------------------------------|-----------|
| D1501 | 1 | 20A | SOURCE & INTERMEDIATE RANGE MONITORS & AUXILIARIES | C36 | D2501 & D25 | #10 |
| D1502 | 2 | 20A | PROCESS RADIATION MONITORS & AUXILIARIES | C10 | D2502 & D25 | #10 |
| D1503 | 3 | 20A | CONTAINMENT ATMOSPHERE MONITORING ISOLATION VALVE IND. | C259 | D2503 & D25 | #10 |
| - | 4 | 20A | SPARE | | | |

#125-24V. DC. DISTRIBUTION PANEL D25 (F.P. #5828-E-10-4)

| SCHEME NO. | CKT. NO. | BKR. RATING AMPS | DESCRIPTION | LOCATION | ROUTING SEPARATION FROM SCHEME | WIRE SIZE |
|------------|----------|------------------|--|----------|--------------------------------|-----------|
| D2501 | 1 | 20A | SOURCE & INTERMEDIATE RANGE MONITORS & AUXILIARIES | C36 | D1501 & D15 | #10 |
| D2502 | 2 | 20A | PROCESS RADIATION MONITORS & AUXILIARIES | C10 | D1502 & D15 | #10 |
| D2503 | 3 | 20A | CONTAINMENT ATMOSPHERE MONITORING ISOLATION VALVE IND. | C260 | D1503 & D15 | #10 |
| - | 4 | 20A | SPARE | | | |

TYPICAL PANEL ARRANGEMENT D15

| | |
|--------|--------|
| CKT. 1 | CKT. 2 |
| CKT. 3 | CKT. 4 |



NOTES:

1. THE NEUTRAL BARS (C) IN D15 & D25 SHALL NOT BE GROUNDED IN THE PANELS THE CIRCUITS ARE GROUNDED AT THE LOAD (C36 & C10) END ONLY.
2. FOR VENDOR SCHEMATIC SEE DWG. NX-28922-3.
3. FOR ANNUNCIATOR SCHEMATIC SEE DWG. NE-36640-7.
4. SCHEMES D1501 AND D2501 EACH HAVE THREE CONDUCTORS ROUTED TO PANEL C-36. WIRES P AND N ARE CONNECTED TO THE LOAD SIDE OF BREAKERS D1501 AND D2501 AND WIRE C (COMMON WIRE) IS CONNECTED TO THE COMMON (NEUTRAL) BAR.
5. SCHEMES D1502 AND D2502 EACH HAVE THREE CONDUCTORS ROUTED TO PANEL C-10. WIRES P AND N ARE CONNECTED TO THE LOAD SIDE OF BREAKERS D1502 AND D2502 AND WIRE C (COMMON WIRE) IS CONNECTED TO THE COMMON (NEUTRAL) BAR.
6. SCHEME D1503 HAS TWO CONDUCTORS ROUTED TO PANEL C-259. WIRE P1 IS CONNECTED TO THE LOAD SIDE OF BREAKER D1503 AND WIRE N1 (COMMON WIRE) IS CONNECTED TO THE COMMON (NEUTRAL) BAR.
7. SCHEME D2503 HAS TWO CONDUCTORS ROUTED TO PANEL C-260. WIRE P1 IS CONNECTED TO THE LOAD SIDE OF BREAKER D2503 AND WIRE N1 (COMMON WIRE) IS CONNECTED TO THE COMMON (NEUTRAL) BAR.
8. BREAKERS D1501, D1502, D1503, D1504, D2501, D2502, D2503, D2504 ARE BOLTED DIRECTLY TO THE POSITIVE AND NEGATIVE BUS BARS (REF NX-9238-3).

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E-110 SH.6
MONTICAD DWG "76"

24V DC DISTRIBUTION - PANEL D15, D25

MONTICELLO NUCLEAR GENERATING PLANT

Xcel Energy
NORTHERN STATES POWER COMPANY

SCALE: NONE

REV 76

NE-36640-6

REVISIONS

76 EC18483

ENHANCEMENTS INDICATED BY

DWN: JJP 7-22-11

CHK: BAL 7-22-11

APPR: PSN 7-22-11

| | |
|--|-----------|
| | REVISIONS |
|--|-----------|

| | |
|----|----------|
| 81 | EC 12920 |
|----|----------|

DWN: JJP 8-6-08
CHK: PEB 8-15-08
APPR: WK 8-15-08

| | |
|----|--------|
| 82 | EC9411 |
|----|--------|

DWN: JJP 8-22-08
CHK: DAN 8-27-08
APPR: DZ 8-27-08

| | |
|------------------|----------|
| 83 | EC 14036 |
| DWN: JJP 4-15-09 | |

| | |
|------------------|----------|
| CHK: BAL 4-15-09 | |
| APPR: KC 4-15-09 | |
| 84 | EC 13285 |

DWN: JJP 5-20-09
CHK: BAL 5-20-09
APPR: DM 5-20-09

85 EC 16121

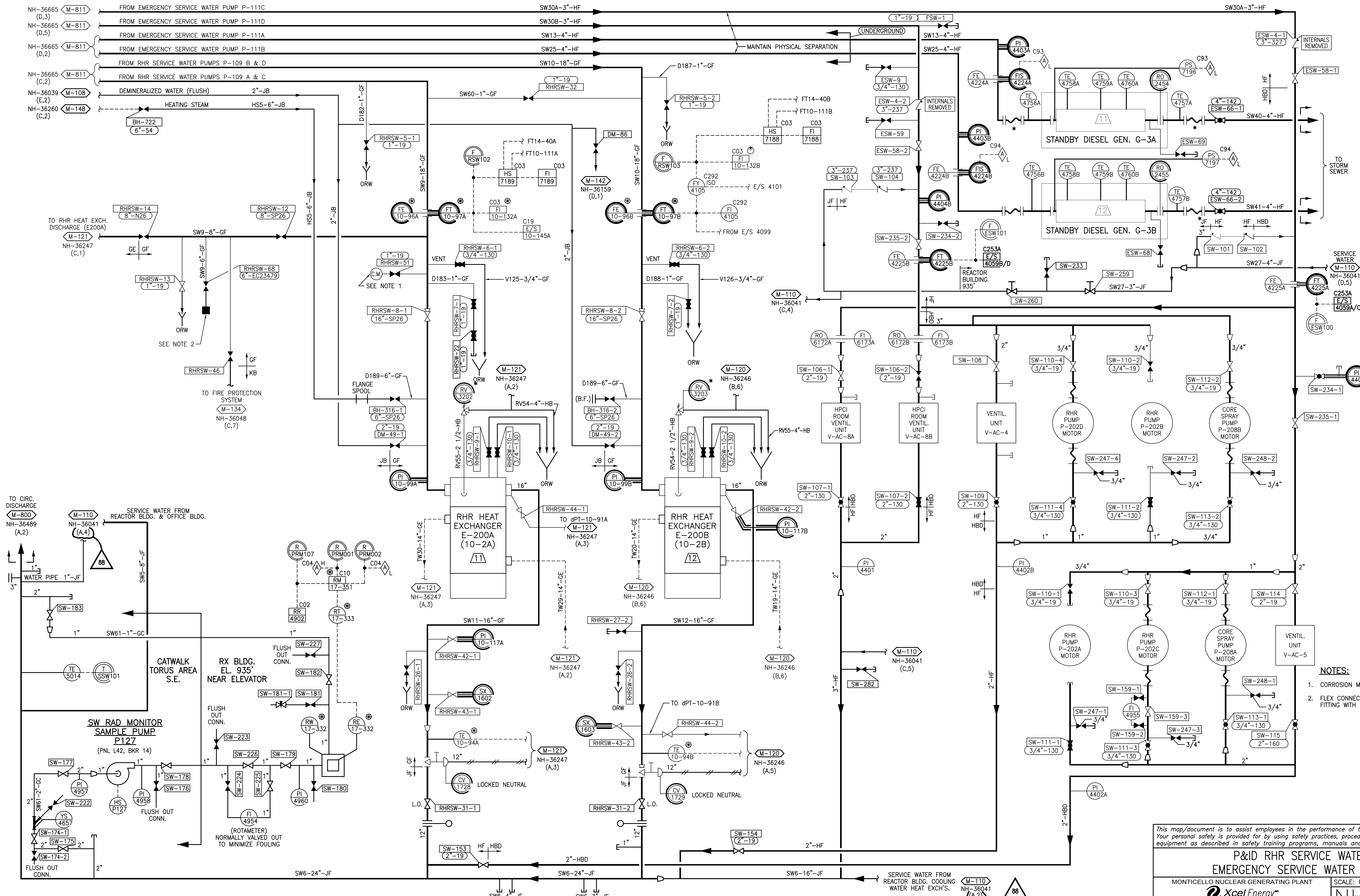
CHK: BAL 1-4-11
APPR: CER 1-24-11
86 EC23675

DWN: JJP 10-30-14
CHK: BAL 10-31-14

APPR: NEO 11-3-14
87 EC 23479

DWN: JJP 12-16-14
CHK: AJR 12-16-14
APPR: DAM 12-17-14
52 5200170

88 EC 26170
DWN: JJP 10-6-15
CHK: SDP 10-6-15



NOTES:

1. CORROSION MONITOR COUPON IS ABANDONED.
2. FLEX CONNECTION (5" STORZ FIRE HOSE FITTING WITH CAP).

COLOR LEGEND

- ☐ ASME CLASS 1/QUALITY GROUP 1
- ☐ ASME CLASS 2/QUALITY GROUP 2
- ☐ ASME CLASS 3/QUALITY GROUP 3
- ☐ QUALITY GROUP D
- ☐ SAFETY RELATED MECHANICAL
- ☐ SAFETY RELATED ELECTRICAL
- ☐ SPECIAL CONCERNS ITEM

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M-112

P&ID RHR SERVICE WATER & EMERGENCY SERVICE WATER SYSTEMS

MONTICELLO NUCLEAR GENERATING PLANT

SCALE: NONE

REV 81



NORTHERN STATES POWER COMPANY

NH-36664