

EVALUATION OF THE EFFECTS OF
HIGH ENERGY LINE BREAKS ON
CONTROL SYSTEMS

APPENDIX D

COMMONALITY DIAGRAMS

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4" RWCU
HELB IN AREA
25-5

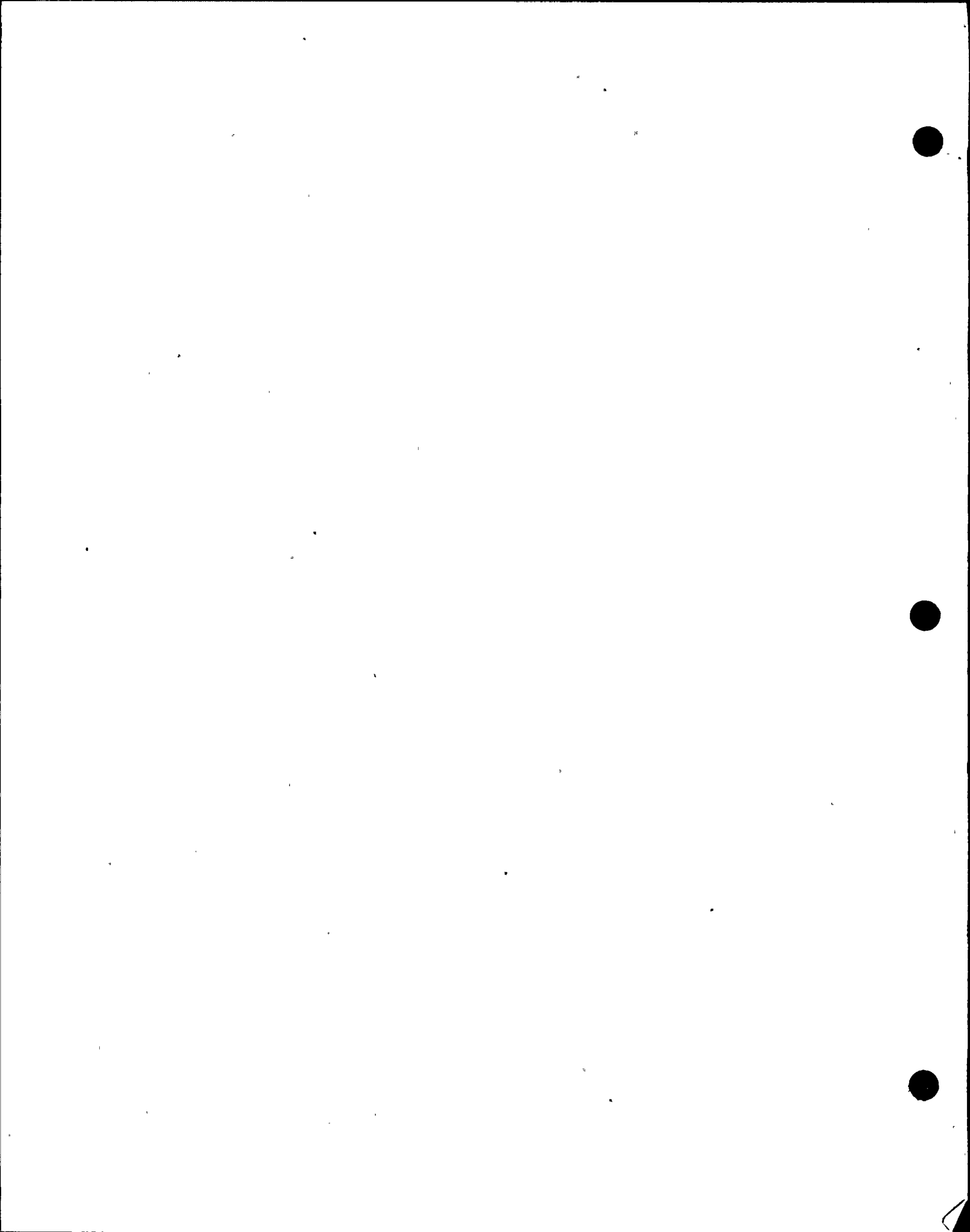
REACTOR WATER
CLEANUP CONTROL
SYSTEM

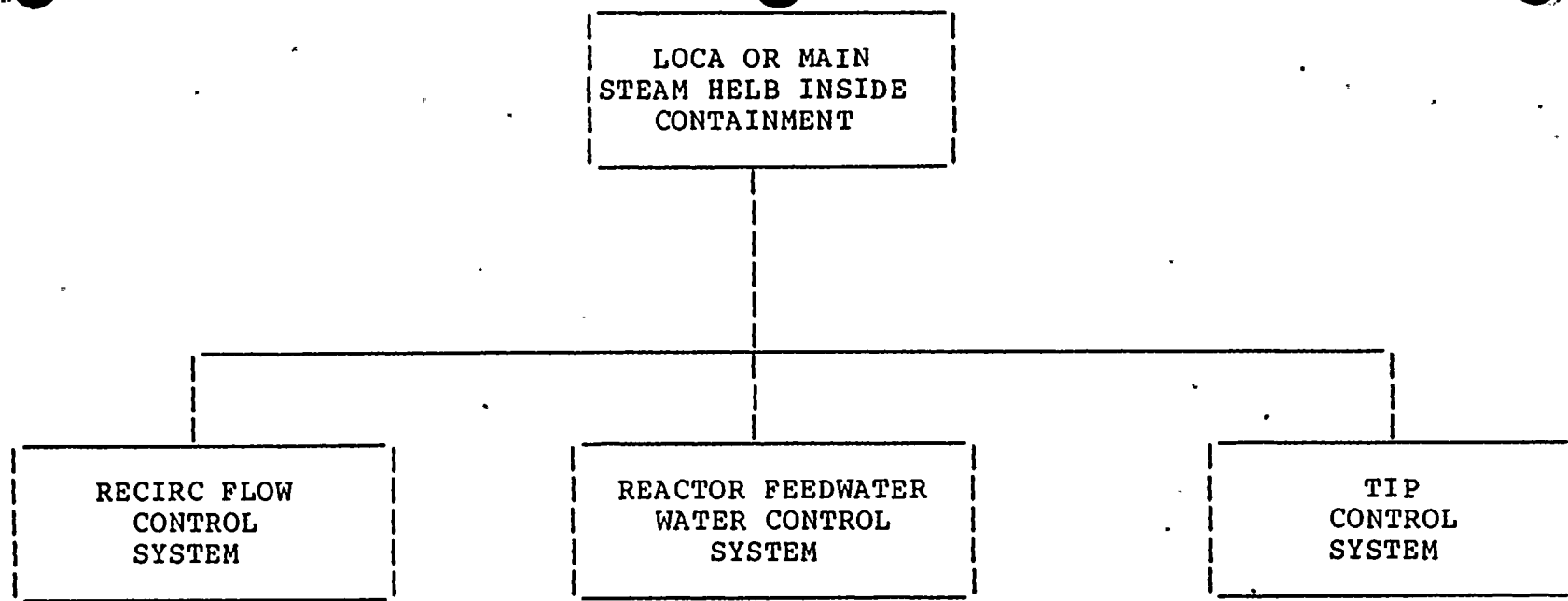
TIP
CONTROL
SYSTEM

- o Filter demin inlet temp inst.
- o RWCU Recirc pump lo flow inst.
- o HV-1F033 flow control
- o Reactor bottom head flow
- o RWCU recirc. pump cooling water temp hi shutoff sw.

- o Guide tube valve assembly
- o Purge valve

Commonality Diagram D-1
HELB In The Reactor Building
Job No. 0160-013-1671
Report No. 02-0160-1131 Rev. 0
SSES HELB/Control
System Evaluation





- o Pos. Sw for recirc valve
 - Suction
 - Disch
 - Bypass

- o Main stm flow input to 3 el. control
- o Reactor vessel level input to 3 el. control
- o Reactor vessel press inst.

- o TIP indexing mechanisms

Commonality Diagram D-2
 HELB Inside Containment
 Job No. 0160-013-1671
 Report No. 02-0160-1131 Rev. 0
 SSES HELB/Control
 System Evaluation

MAIN STEAM OR
FEEDWATER HELB
IN TURBINE BUILDING

TURBINE
GENERATOR
CONTROL SYSTEM

- o Turb. overspeed protection
- o Main steam press inst.
- o Gen stator cooling water inst.
- o Turb. trip alarm & relays
 - Thrust brg wear detector & low brg oil press
 - Lo hyd fluid press
 - shaft pp disch lo press
 - Exh hood high temp gen end trip
 - MSR drn tk hi lvl trip
 - Lo cond. vac. trip
 - Gen sequential trip
 - Stator coolant lo press trip
- o Turbine Supervisory Inst.
- o Steam chest metal temp inst.
- o Gen windings temp inst
- o Gen conductivity cell inst.
- o T/G shaft speed inst
- o PMG speed unit
- o Position transducers, switches, sol va, and servo va. for:
 - Main stop va.
 - Control va.
 - Intercept va.
 - Bypass va.
 - Intermediate stop va.
- o Solenoid va for;
 - Reset oil va
 - Lockout va
 - Oil trip va
 - Master trip

RECIRC. FLOW
CONTROL
SYSTEM

- o Lube Oil temp hi-sw, and press lo sw
- o Runback signal inst.
 - Circ. water
 - Feed flow
 - Cond. press
 - Fw htr level hi
- o MG temp inst.
- o Recirc pump suct. & disc va pos inst.

REACTOR FEED
WATER CONTROL
SYSTEM

- o Feedwater flow Inst.
- o Manual speed control
- o Loss of auto control
- o Turbine trip A,B, & C
- o Loss of startup flow control

REACTOR
MANUAL
CONTROL SYSTEM

- o 1st stage turb. press.