



**INDIANA AND MICHIGAN POWER
D. C. COOK NUCLEAR PLANT
UPDATED FINAL SAFETY ANALYSIS REPORT**

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Containment Spray System Malfunction Analysis

| Component | Malfunction | Comments and Consequences |
|-------------------------------------|--|---|
| 1. Containment Spray Pump | Rupture of Pump casing | Isolate train. Redundant train continues to operate requirement is one train. |
| 2. Containment Spray Pump | Pump fails to start. | One of two pumps operating will supply 100 percent of required flow |
| 3. Containment Spray Pump | Pump suction line closed | This is prevented by pre startup checks. During power operation, each pump is tested on a periodic basis. During these tests checks will be made to confirm that a motor operated valve (from the refueling water storage tank) is open. The manual valve from the recirculation sump is locked or sealed open. Motor operated valve positions (open or closed) are indicated in the control room |
| 4. Containment Spray Pump | Pump discharge motor operated valve fails to open. | Motor operated valves are redundant and only one of the two need operate. Valve positions (open or closed) are indicated in the control room. |
| 5. Containment Spray Pump | Discharge Check Valve fails to open | The check valves were checked in preoperational tests and are checked during periodic tests. |
| 6. Containment Spray Heat Exchanger | Drain Valve left open / Manways left open | This is prevented by pre-startup checks. Leak detection sumps in the spray system compartments are provided with level alarms which are initiated if a drain valve is open and discharging into the compartment |



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| Component | Malfunction | Comments and Consequences |
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| 7. Containment Spray Heat Exchangers | Tube or shell rupture | Isolate train. Redundant train continues to operate. One train will provide 100% flow. |
| 8. Containment Spray Eductors | Motor Operated Supply Valve fails to open | The motive water supply valve is normally open and is checked by periodic test. |
| | | The suction supply valves (from the spray additive tank) are redundant and only one of the two need be open. Valve position is indicated in the Control Room. |