

Institute of Nuclear Power Operations

Session W25 US Industry Reliability Data Collection Process

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Reporting Scope

- Component failure and success (demand and run hour) data
- Additional risk related data
- Used to calculate failure per demand and failure per run hour
- Supports Mitigating Systems Performance Index (MSPI) Unreliability Indices (URI) and Probabilistic Risk Assessment (PRA) actuarial data

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Data Model

- Components (Device) based
 - Risk profile per Maintenance Rule and MSPI
 - Link to station, unit, system, function, success data, failure records
- Graded approach to data collection based on Device Type

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Device Types

- Key components system/train flow path
 - MSPI (30-50 per unit)
 - Other Risk-Significant (300-1300 per unit)
- Supporting/Sub components that support the operation of a single key component

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Other Component Data

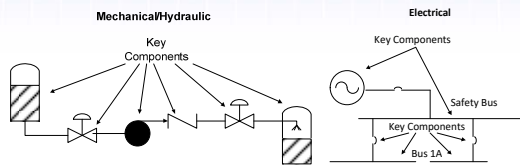
- Unique identifiers (Unit 1, AFW -43, 1/11/97)
- Component Type (valve)
- Subtype (2-4 inch, solenoid operated, globe)
- Common Name (Auxiliary Feedwater Flow Isolation Valve)
- Associated system and train

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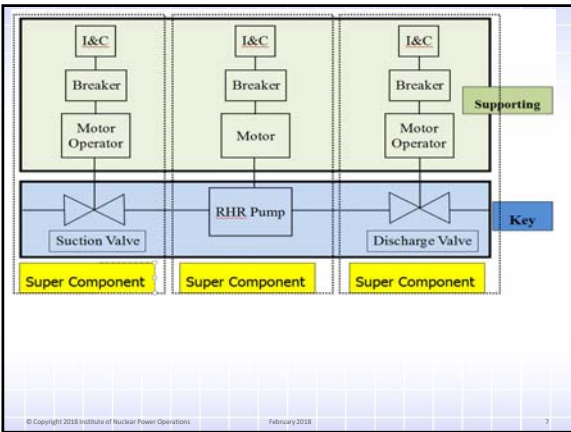
Key Components

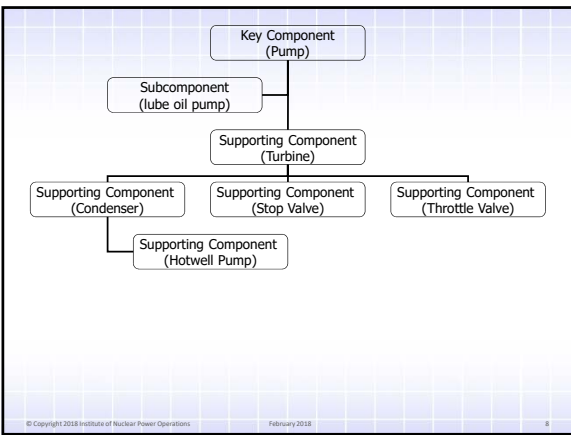


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Success Data – Key Components

- Diesel Generators - start & load demands, run hours
- Other Rotating -demands & run hours
- Two state equipment (valves, etc.) -demands
- Graded approach: MSPI (ESF/Operational/Test)

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Failure Data

- Reporting Required for MSPI / other risk significant failures/functional failures
- Key component, discovery & performance description
- Initiating component – failure point of origin

Was any function of a major (key) component affected? Yes No

Please Review your Following Info :

Supporting Component Initiator HPSI PP 1B, MTR
System : HPSI System (PWROJ)
Component : Motors (electric, hydraulic, pneumatic) 763262 ()
Performance Description : Failed to Start on Demand
Age at Failure: 41 Years, 21 Days

Piece Parts and Lessons Learned
Commutator -

Key Component Affected HPSI PP 1B, PUMP
System : HPSI System (PWROJ)
Component : Pumps, exducers 260909 (Risk Significant , is Misa Device , APR13 Critical)
Performance Description : Failed to Start on Demand
Age at Failure: 22 Years, 96 Days

Your Components Structure

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Additional Risk Related Data

- MSPI system train unavailability (monthly)
- Unit critical hours (monthly)
- PRA data needed for MSPI risk worth calculations (upon unit PRA update)
- MSPI monitored key components
- MSPI monitored trains/segments

Process

- Station data entry
- Coach logic checks (165)
- INPO staff quality review and feedback
- Station reporting metrics
- Data to NRC quarterly under MOU for PRA actuarial data
