Improve Operations and Alarm Management with DynAMo and Intuition Software
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Agenda

• A new approach to Alarm and Operations Management Projects
  – What is Alarm Management?
  – What is Operations Management?
  – Desired outcomes
  – Traditional Approach
    • Failure Modes
  – Recommended Approaches
  – Summary

• Product Direction

• Questions
What is Alarm Management?

“Process by which alarms are engineered, monitored and managed to ensure safe, reliable operations.”
What is Alarm Management?
What is Operations Management?

**Work practices and tools for the operations team**

<table>
<thead>
<tr>
<th>Assist operators to stay within the correct range or operating envelope</th>
<th>Define planned targets and assist operators to stay as close to plan as possible</th>
<th>Capture observations and call attention to problem areas for continuous improvement</th>
<th>Enable effective shift handover</th>
<th>Meet regulatory requirements</th>
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**Desired Outcomes**

- Reduce unplanned outages
- Reduce production losses
- Reduce environmental excursions
- Reduce safety incidents
Traditional Approach

- Intend to work alarm management first and then operations management
  - Start by creating a philosophy; perform audit to have a baseline
  - Make immediate improvements with bad actor cleanup
  - Add rationalization efforts
  - Continue routine audits to improve

Elapsed Time
1 Year
Traditional Approach

- Alarm management “finished,” begin focus on Operations Management
  - Monitor limits to stay within best operating zone; add operating instructions at the same time
  - Add electronic logbook; integrate data from other sources
    - Shift feedback can now be used in alarm management cycles

Diagram:
- Philosophy → Bad Actor Cleanup → Rationalization
- Audit → Rationalization
- Operations Monitoring → Operating Instructions
- Operations Monitoring → Operations Logging

Elapsed Time:
- 1 Year
- 9 Months
Traditional Approach

• Failure Modes
  – Ignore rationalization after bad actor cleanup – maybe even jump to flood strategies like suppression
  – KPIs not reviewed and worked
  – Bogged down in alarm management efforts and never begin operations management efforts
  – Project resources change roles and efforts deteriorate
  – Management loses interest in funding given project stretches a year or more
  – Others…

Alarm Management and Operations Management can't be separate efforts!
Recommended Approach

• Philosophy scope expanded to address limits “inside” alarms that help operator stay in best operating zone
  – Adds time early that avoids large impact on implementation rework
• Make immediate improvements with bad actor cleanup
• Audit routinely to improve
Recommended Approach

- Add rationalization efforts
- Capture best operating zone (limits inside alarms) in a Limit Repository
  - Data is available and used when defining alarm settings
  - Can begin monitoring and logging to get operator feedback
- Continue routine audits to improve

New work processes!
Operators will need training.

Elapsed Time
1 Year
3 Months
(+3)
Recommended Approach

- Add operating instructions and monitor those plan limits as part of best operating zone
  - New work process that requires training

Elapsed Time
1 Year
5 Months
(-4)

Less total project time!
Avoids potential rework.
Example Shift Log

Deviations from Intuition Operations Monitoring

Alarm Metrics from DynAMo
Example Shift Log

Remarks for FCC Cat Naphtha, ...

Reason:
Operation \ Incorrect limit setting
Select category and problem.

Categorize:
Classification

Priority
- High
- Low
- Medium

Comment:
Limit needs to be adjusted. This target is going in and out of deviation, but the process is running normally. Please fix this nuisance.

Save  Cancel  Clear
Example Shift Log

Configurable checklist for effective shift handover.
Summary

- Alarm Management and Operations Management projects have consistent desired outcomes
- Traditional serial approach often loses steam after implementing alarm management improvements
- Combined approach shortens overall project length – achieves desired outcomes sooner
  - One “disruptive” effort for operations team rather than a series of disruptions
- Work processes are paramount and often determine success
  - Appropriate training
- Consider a partner that can deliver the entire solution
  - Honeywell expertise coupled with leading products such as DynAMo and Intuition Operations Suite of applications
Some Observations

• After alarm rationalization is complete, operations will move on to the next challenge and not move forward with operations management
• Alarms continue to drive decisions on operational changes
• Electronic logbooks are used the same way that paper logbooks were used
• Most operators do not know the “sweet spot” of their operation
Questions…

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