

# SRNS Causal Analysis Program

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## Causal Analysis - Overview

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- 226.1B Requirements – “The contractor assurance system ... must include ... a structured issues management system ... for issues categorized as higher significance ... a thorough analysis of the underlying causal factors ...”
- Implementing Procedure(s) – 22Q, CA-1, *Causal Analysis* and 22Q, CAP-1, *Corrective Action*
- Training – QARCA001 & QARCA002
- IT Platform – None
- Metric(s) – Causal Analysis Timeliness & Causal Analysis Quality



## Causal Analysis – *Significance Categories*

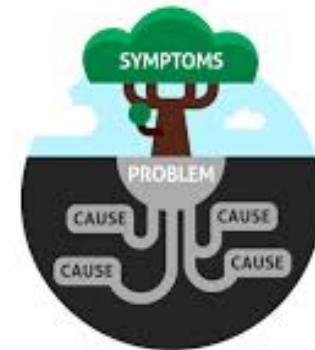
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- **Significance Category 1 – *Significant*** impact on safe/secure facility operations, worker of public safety and health, regulatory compliance, or public/business interests.
  - ~ 1 / Year Over the Last Three Years
- **Significance Category 2 - *Moderate*** impact on safe/secure facility operations, worker of public safety and health, regulatory compliance, or public/business interests.
  - ~ 120 / Year Over the Last Three Years (~ 12 NTS Reportable, SCAQ, or Upgraded)
- **Significance Category 3 - *Minor*** impact on safe/secure facility operations, worker of public safety and health, regulatory compliance, or public/business interests.
  - ~ 2400 / Year Over the Last Three Year

# Causal Analysis – *Required Issue Evaluations*

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- **Significance Category 1 & NTS Reportable or SCAQ 2s – ~ 12 / Year**
  - Root Cause Analysis (Requires Extent of Condition, Precursor Event Historic Review, and Self-Assessment Program Review)
  - Actions to Prevent Recurrence of Similar Problems
  - Effectiveness Review
  - Applicable Program or Facility Review Board & Senior Management Review Board
  
- **Significance Category 2 – ~120 / Year**
  - Apparent Cause Analysis
  - Actions to Prevent Recurrence of the Problem
  - Effectiveness Review
  - Applicable Program or Facility Review Board
  
- **Significance Category 3 – ~2400 / Year**
  - Causal Coding for Trending





## Causal Analysis – *Rapid Improvement Event*

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- Conducted in Sept. 2017
- Team included DOE-SR and Savannah River Remediation
  
- **Identified Problems**
  - Lack of Standard Work
  - LTA Qualification Program
  - LTA Line Management Leadership
  - LTA Independent Oversight
  
- **Actions**
  - 25 Actions Placed in STAR Central Tracking System
  - 3 Actions Remaining
    - *Revise 22Q Manual Glossary*
    - *Populate Metric of Causal Analysis Grading*
    - *Hold First Quarterly Feedback Meeting of Causal Analysts*



# Causal Analysis – *The New Process*

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- Step #1 - Issue Review / Fact Finding
- Step #2 - Lead Causal Analyst Preparation
- Step #3 - Initial Management Meeting
- Step #4 – ‘Natural Team’ Meeting
- Step #5 - Kick-Off Meeting
- Step #6 - Causal Analysis
- Step #7 - Presentation of Causal Analysis Chart to Management
- Step #8 - Draft Causal Analysis Report
- Step #9 - Management & Peer Review of Draft Causal Analysis Report
- Step #10 - Review Board Approval of Causal Analysis Report
- Step #11 - Final Grading of the Causal Analysis Report
- Step #12 – Monthly Metric and Quarterly Community Feedback Meetings







## Causal Analysis – *Blue Dragon TM*

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- Timeline
- Applicable Barriers
- Themes
- Lines-of-Inquiry
- ‘Why? / Why?’ Staircase Using Socratic Questioning Techniques
- Causal Factors / Direct Cause / Root Causes / Contributing Causes
- “Rigor provides confidence!” / “There is no answer sheet!”



# Causal Analysis – *New Features*

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- Rigorous Qualification Program
- Blue Dragon as the Overarching Method
- Single Causal Analysis Report Template
- Peer Grading & Review Prior to Review Board Presentation
- Community Grading After Review Board Approval
- Quarterly Community Feedback Meetings
- Causal Analysis Lead Doing More Oversight & Mentoring than RCAs & ACAs
- The Central Contractor Assurance Organization has Added Two Qualified RCAs







## Causal Analysis – *Attitudes to Adopt*

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- Do Not Fall Prey to Believing the NEWEST Causal Analysis Technique is the golden bullet
- Line Management Leadership of the Process is VITAL
- There is no Causal Analysis Answer Key
- Go as Deep as you need to, but not much farther. The dig is not worth the cost. Point of diminishing returns.





# Causal Analysis – *Good Practices #1*

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- Rigorous Training & Qualification Process / Maintenance of Proficiency
- Ensuring good connectivity between the Fact Finding and the Causal Analysis
- Adopting an Overarching Structure of Reporting
- The establishment of an interim Management Presentation prior to final report writing
- Peer Grading & Review Prior to Management Review Board Presentation & Approval
- Grading After Management Review Board & Approval
- Routine Feedback Meetings & Continuing Training





## Causal Analysis – *Good Practices #2*

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- Maintaining Ongoing Dynamic Oversight of the Causal Analysis Process
- Utilization of Metrics to Monitor and Improve Performance
- Engage local Department of Energy personnel in the process.
- Succession and Deployment Planning of Site Causal Analysis Experts
- Promote cross-company sharing and learning
- Ensure feedback to participants
- Celebration of Successes



## Causal Analysis – *Go Do's*

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- Begin to perform Causal Analysis on lower level issues or even success stories
- Establish guidance / decision tree for 'Extent-of-Condition' & 'Extent of Cause'
- Incorporate Change Analysis and HPI into the Causal Analysis Process (?)
- Begin to share 'green eye' participants across DOE Complex Sites (Benchmarking) - Develop a Causal Analysis Resource List
- Evaluate National Training Center course for applicability



## Causal Analysis Feedback Form

<b>STAR #:</b>	<b>Issue Title:</b>		
<b>RM:</b>	<b>Cause Analyst(s):</b>		
<b>Feedback Team Members:</b>			
<b>Feedback Scale: 1 = does not meet expectation; 2 = meets expectation with some improvements needed; 3 = fully meets expectation</b>			
Causal Analysis Report Element		Criteria	Scale
<b>1</b>	<b>Issue / Problem Statement</b>	<ul style="list-style-type: none"> <li>Description of Who, What, Where, When, and a consequence as appropriate for issue.</li> <li>States the actual condition, and the desired condition (e.g., "Sump level high alarm was at 11" – what should it have been?).</li> </ul>	<ul style="list-style-type: none"> <li>Does not include a predetermination of the cause (e.g., "because...").</li> <li>Does not include corrective actions.</li> <li>Concise.</li> <li>Form of a statement (not a question).</li> </ul>
<b>2</b>	<b>Background Info</b>	<ul style="list-style-type: none"> <li>Describes how the issue was identified and helps support the perspective of the analysis and identified causes.</li> <li>Amount of information is relative to the complexity of the issue and helps the reader understand important aspects of the issue.</li> <li>Summary written in a manner that a reviewer without direct experience with the issue could reasonably understand the condition. Uncommon acronyms are spelled out.</li> </ul>	
<b>3</b>	<b>Cause Analysis Results</b>	<ul style="list-style-type: none"> <li>Summary of the analysis clearly describes the identified cause(s).</li> <li>Contributing causes are discussed and impact to the condition is explained.</li> </ul>	
<b>4</b>	<b>Causal Analysis Method Used</b>	<ul style="list-style-type: none"> <li>Documentation of the causal methodology used (e.g., why staircase, barrier analysis table, etc.) is integrated or attached to the report. Documentation supports the cause analysis results and reflects proper performance of the methodology*.</li> </ul> <p style="margin-left: 20px;">*Reference the SRR Issues Management/Causal Analysis webpage for methodology guidance.</p>	
<b>5</b>	<b>Causes and Corrective Action Table</b>	<ul style="list-style-type: none"> <li>Cause description(s) is the same as identified in the analysis results and method sections of the report.</li> <li>Cause description(s), CAT code(s) and corrective action(s) logically align with one another.</li> <li>For an HPI code, an associated code (couplet) is assigned.</li> <li>One "Prevent Recurrence" corrective action is identified for each cause.                             <ul style="list-style-type: none"> <li>- Significant causes with no corrective actions are discussed outside of the cause/CAT code table.</li> </ul> </li> <li>Actions are "SMART" (Specific, Measurable, Achievable, Relevant, and due dates are Timely).                             <ul style="list-style-type: none"> <li>- The desired outcome of the action (i.e., deliverable) is clearly defined.</li> </ul> </li> </ul>	
<b>6</b>	<b>Causal Analysis Team</b>	<ul style="list-style-type: none"> <li>Pertinent individuals/organization representatives were included on the team.</li> <li>Causal analyst is trained.</li> </ul>	
<b>Note:</b> The following sections are required if the issue was SCAQ or NTS reportable.			
<b>7</b>	<b>Extent of Condition (EOC)</b>	<ul style="list-style-type: none"> <li>Bounds of the EOC clearly defined.</li> <li>Results of the EOC described.</li> <li>Corrective actions developed to address the EOC.</li> <li>If results of the EOC indicate further analysis is likely warranted, follow-up actions are defined.</li> </ul>	
<b>8</b>	<b>Precursor Event Historic Review</b>	<ul style="list-style-type: none"> <li>Summary describes how the review was performed and results of the review.</li> <li>If precursor events were identified, impact on the analysis is described.</li> <li>If precursor events were identified, similar/same corrective actions are identified.</li> </ul>	
<b>9</b>	<b>Self-Assmnt (SA) Program Review</b>	<ul style="list-style-type: none"> <li>Summary describes how the review was performed and results of the review.</li> <li>If a weakness was identified in the SA program an action is included to revise the SA schedule.</li> </ul>	

