### ICS-Related Job Role Mapping

<table>
<thead>
<tr>
<th>Job Role</th>
<th>Expert Knowledge</th>
<th>Mastery Knowledge</th>
<th>Essential Knowledge (Foundational)</th>
<th>Base Knowledge (Awareness)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technical Leader</td>
<td>Demonstrates strategic planning abilities</td>
<td>Demonstrates most characteristics of Levels 1 and 2</td>
<td>Has mastered skills related to specific job responsibilities</td>
<td>Understanding and communicating technical concepts to non-technical audiences</td>
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</table>
| Level 1 | Consistently contributes to team effectiveness and demonstrates consensus for group success | Has strong presentation skills | • Has some tactical break/fix responsibilities | Training focuses on management and technical team development as well as methods for interacting with other teams and communicating technical concepts to non-technical audiences.
| Level 2 | Demonstrates ability to manage large projects | Demonstrates an ability to develop recommendations to address identified business issues | • Has entry-level technical skill set | Competency-Level Descriptions
| Level 3 | Demonstrates an ability to develop application/system documentation | Demonstrates an ability to address technical break/fix situations | • Is capable of working under general supervision | Essentials Knowledge (Foundational) Training program should provide a foundational set of standards skills and knowledge for industrial cybersecurity professionals. The training should ensure that the workforce involved in supporting and defending industrial control systems are trained to keep the operational environment safe, secure, and resilient against current and emerging cyber threats. Across a diverse audience, the training program should build a foundation and ensure workers at this level develop a common language in ICS, understand the underlying theories in ICS for safety and reliability, and provide an overview of the basic tools for industrial control system security in settings across a wide range of industry sectors and applications.
| Level 4 | Demonstrates an ability to manage small projects | Demonstrates ownership of systems and processes | • Requires significant day-to-day direction | Mastery Knowledge Training should be role specific and focus on individual and organizational needs to advance knowledge, skills, and ability in a specific field.
| Level 5 | Demonstrates an ability to interpret and apply company standards as applicable to job role and technical environments | Demonstrates ownership of systems and processes | • Has entry-level technical skill set | Technical Leader Training should focus on coordinated response and improvement of team capabilities. This level is typically achieved in joint exercises and projects.

### Job-Level Descriptions

<table>
<thead>
<tr>
<th>Competency Level</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
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</thead>
<tbody>
<tr>
<td>Essentials Knowledge</td>
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<tr>
<td>Mastery Knowledge</td>
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<td>Technical Leader</td>
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### Job Role Groupings

**Engineering**
- • Process Engineer
- • Electrical Controls, and Mechanical Engineer
- • Project Engineer
- • Systems and Reliability Engineer
- • OT Developer
- • PLC Programmer
- • Emergency Operations Manager
- • Plant Networking
- • Control/Instrumentation Specialist
- • Protection and Controls
- • Field Engineer
- • System Integrator

**Operations Technology**
- • Operator
- • Site Security POC
- • Technical Specialists (electrical/mechanical/chemical)
- • OT Security
- • ICS/SCADA Security
- • ICS/SCADA Programmer

**Management**
- • Plant Manager
- • Risk/Safety Manager
- • BU Management
- • C-level Management

**Support Staff**
- • Remote Maintenance & Technical Support
- • Contractors (engineering)
- • IT and Physical Security Contractor
- • Procurement Specialist
- • Legal
- • Contracting Engineer
- • Insurance
- • Supply-chain Participant
- • Inventory Management/Lifecycle Management
- • Physical Security Specialist

**IT Cybersecurity**
- • ICS Security Analyst
- • Security Engineering and Architecture
- • Security Operations
- • Security Response and Forensics
- • Security Management (CSO)
- • Audit Specialist
- • Security Tester

**IT Staff**
- • Networking and Infrastructure
- • Host Administrator
- • Database Administrator
- • Application Development
- • ERP/MES Administrator
- • IT Management
- • Architect