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HOW TO DEVELOP AN INCIDENT RESPONSE PLAN

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CHELAN COUNTY PUBLIC UTILITY DISTRICT

ROCKY REACH DAM

5 MILLION megawatt hours generated in 2023
11 generators
2022 production cost $13.4/MWh

ROCK ISLAND DAM

2.1 MILLION megawatt hours generated in 2023
2 powerhouses – 19 generators
2022 production cost $34.4/MWh

LAKE CHELAN DAM

0.3 MILLION megawatt hours generated in 2023
2 generators
2022 production cost $19.5/MWh

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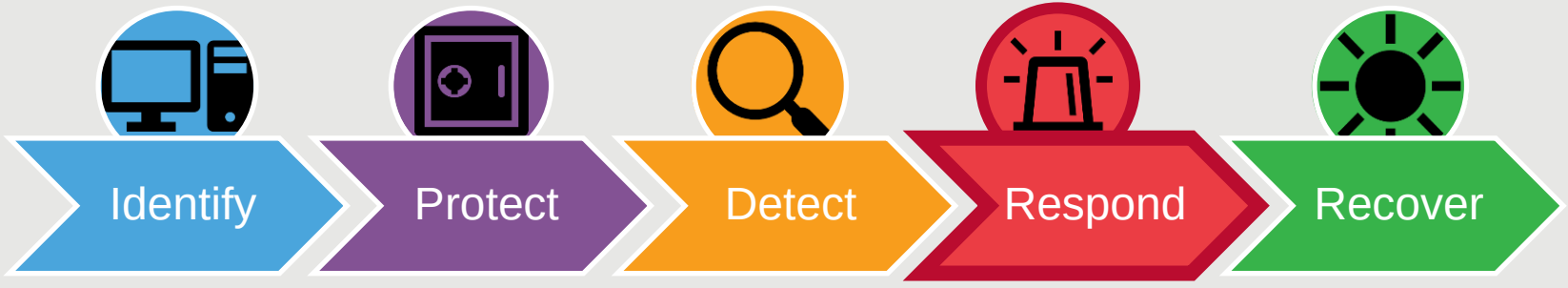
P.U.D. CHELAN COUNTY

NIST Cybersecurity Framework: RESPOND

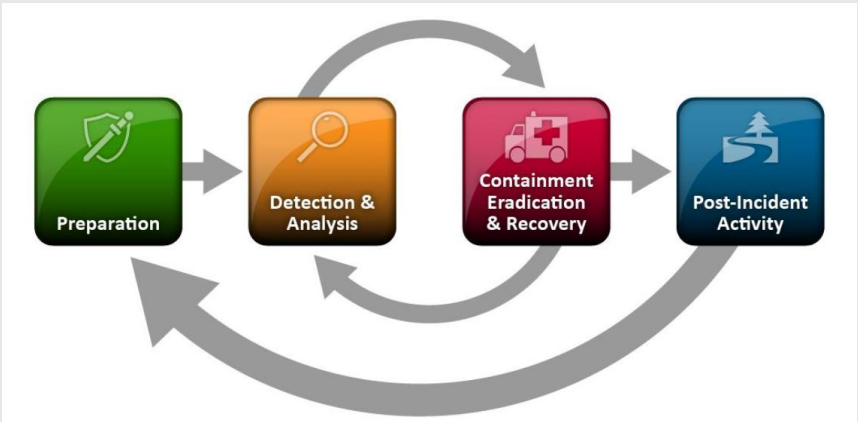


Example Outcomes:

- Ensuring response planning processes are executed during and after an incident
- Managing communications during and after an event
- Analyzing effectiveness of response activities

OUR INCIDENT RESPONSE PLAN JOURNEY

- Overhauled incident response plan in 2016 to comply with U.S. North American Electric Reliability Corp. (NERC) Critical Infrastructure Protection (CIP) version 5 regulations
- Adopted the NIST Model
- Referenced documents to develop plan:
  - *Computer Security Incident Handling Guide*, NIST Special Publication 800-61 Revision 2 (2012)
  - *Developing an Industrial Control Systems Cyber Security Incident Response Capability*, Department of Homeland Security (2009)



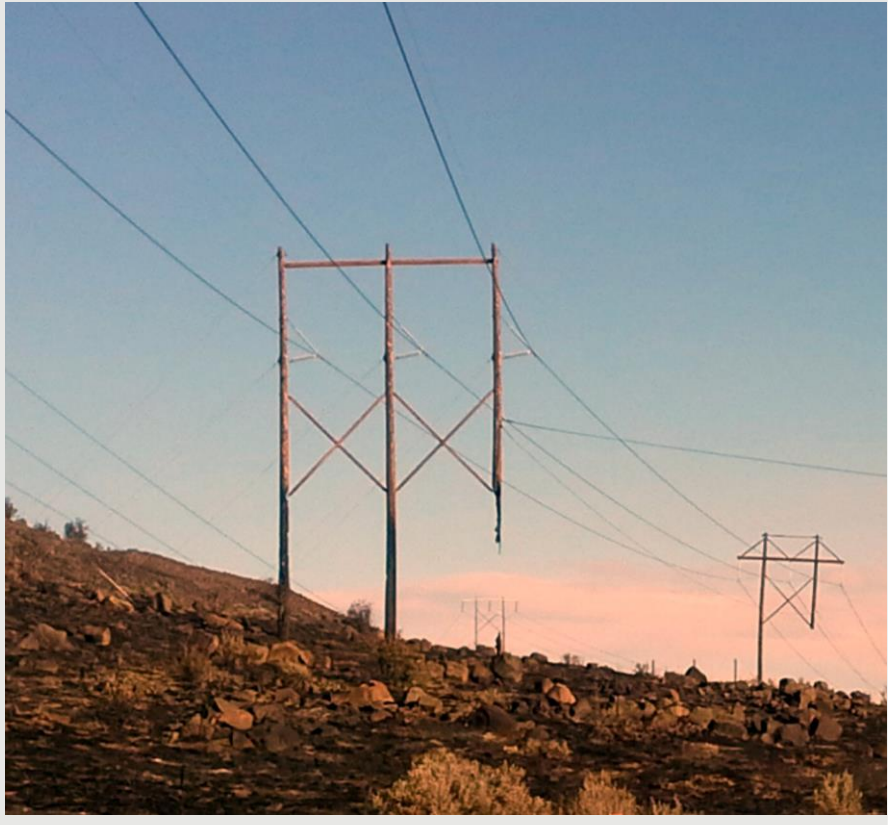
Source: U.S. National Institute of Standards and Technology (NIST)

PREPARATION: Identifying Critical Utility Assets

- All U.S. power utilities apply NERC Critical Infrastructure Protection (CIP) industry-standard classification criteria to identify critical and supporting systems with *high*, *medium*, *low*, or *no impact* to the greater interconnected power grid

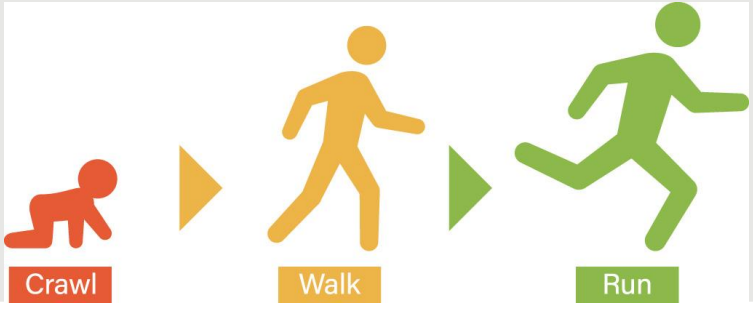
- Based on their impact, systems are protected by physical and cybersecurity controls to mitigate their risks

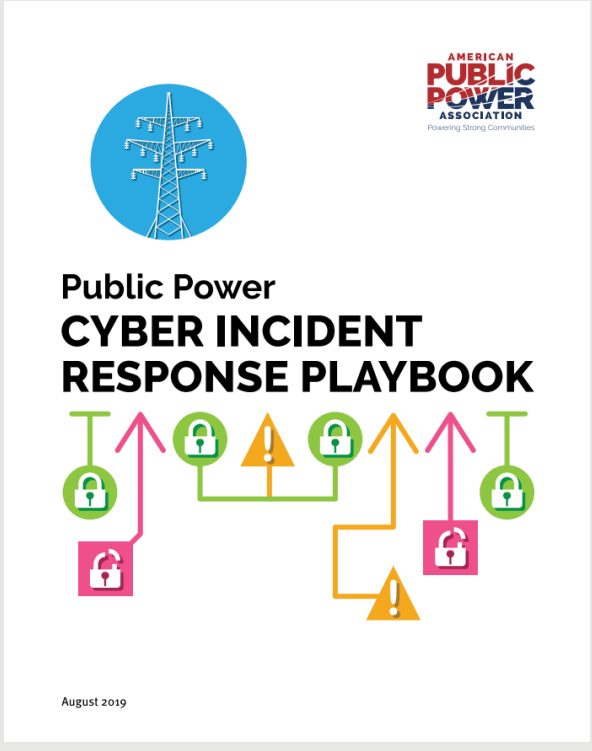
- Chelan uses **business impact risk assessment** to identify additional mitigations for these systems (such as insurance, support agreements, spare inventory, preventative maintenance, etc.)



WRITING YOUR INCIDENT RESPONSE PLAN

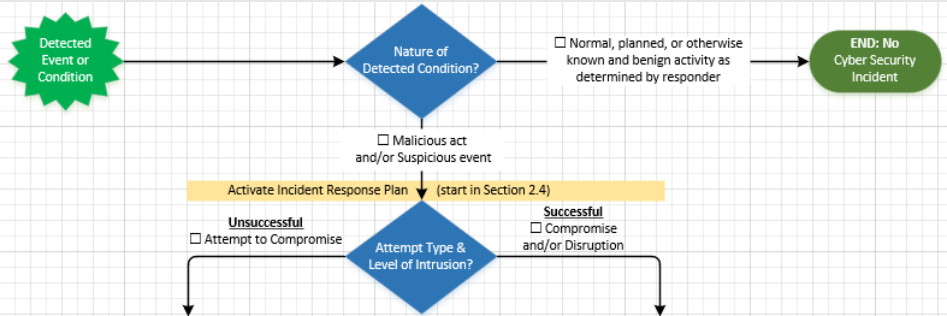
- Follow the *Public Power Cyber Incident Response Playbook* (2019) and its "Top 10 Steps to Develop a Cyber Incident Response Plan"
  - Helped our IT department develop its incident response plan
  - "Right size" your plan to your organization's size and resources
- Put together a plan
  - It won't be perfect and doesn't need to be

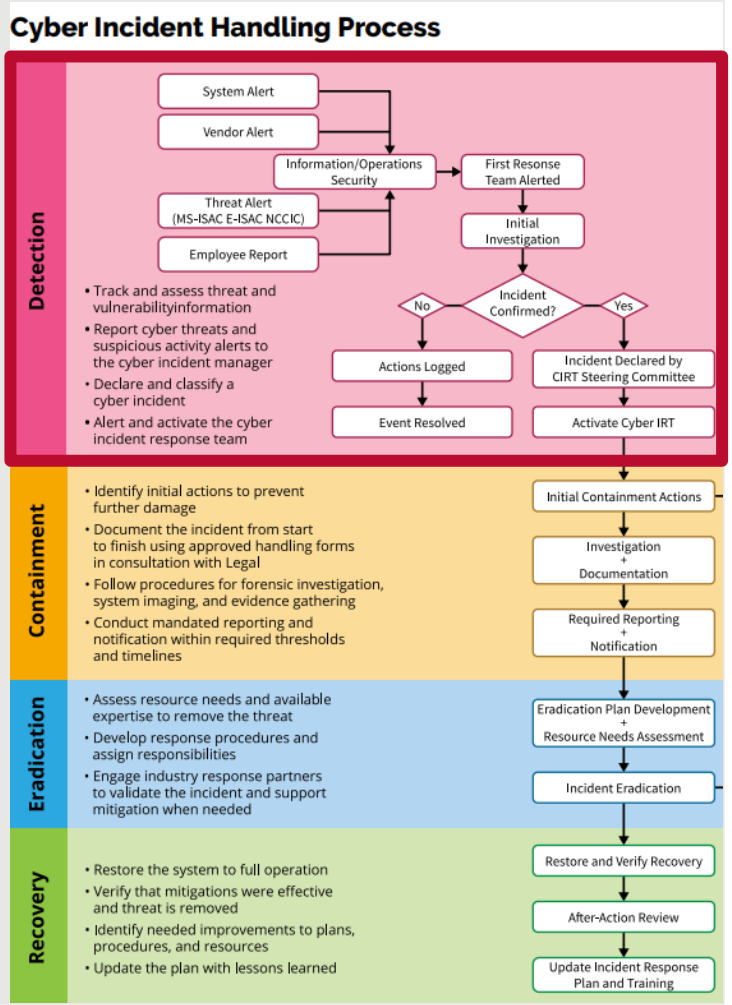




Cybersecurity Incident Response Plan
KEY ELEMENTS

- **Roles and responsibilities** – who does what
- **Detection** – distinguish incident from normal events
  - NERC: "malicious act or suspicious event"
  - Operators: NERC *Cyber Intrusion Guide for System Operators*
  - System Admins: NIST *Guide to Industrial Control Systems (ICS) Security*

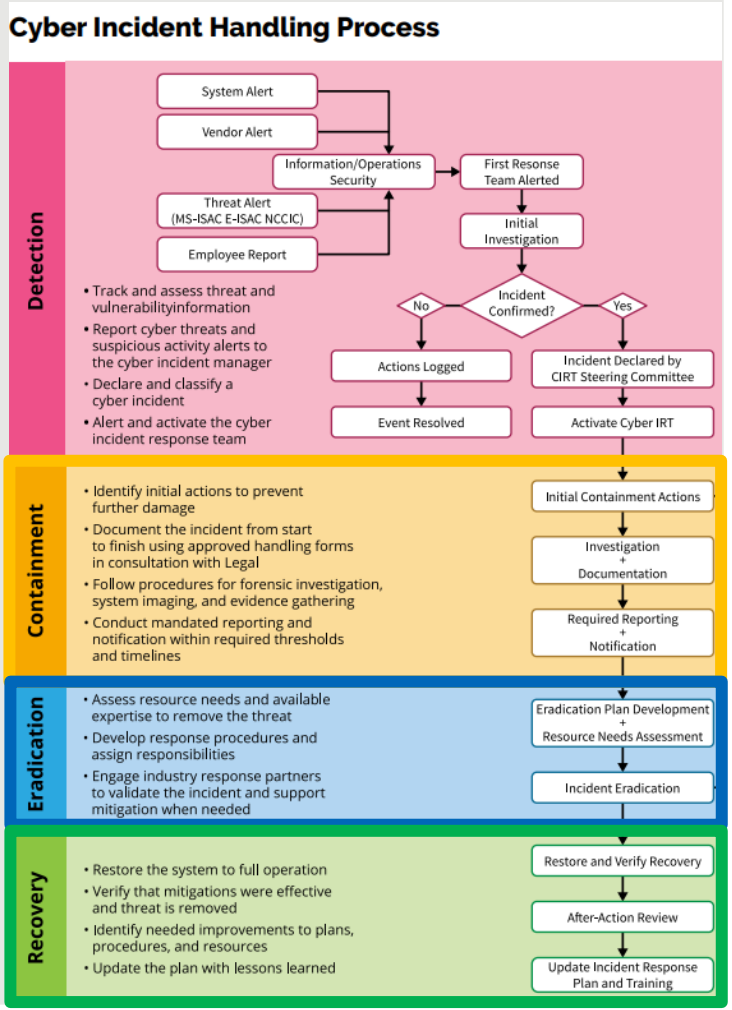




Source: Public Power Cyber Incident Response Playbook

Cybersecurity Incident Response Plan
KEY ELEMENTS

- **Containment** – prevent further damage
  - Document potential containment actions for common incident types that might be overlooked during the frenzy of an incident
- **Eradication** – remove the threat
- **Recovery** – restore the system to full operation
  - Spare hardware for computers, HMIs, PLCs, RTUs, switches, etc. (in case of supply chain delays)
  - Practice operational recoveries of different system types (HMI, firewall, switch, etc.)



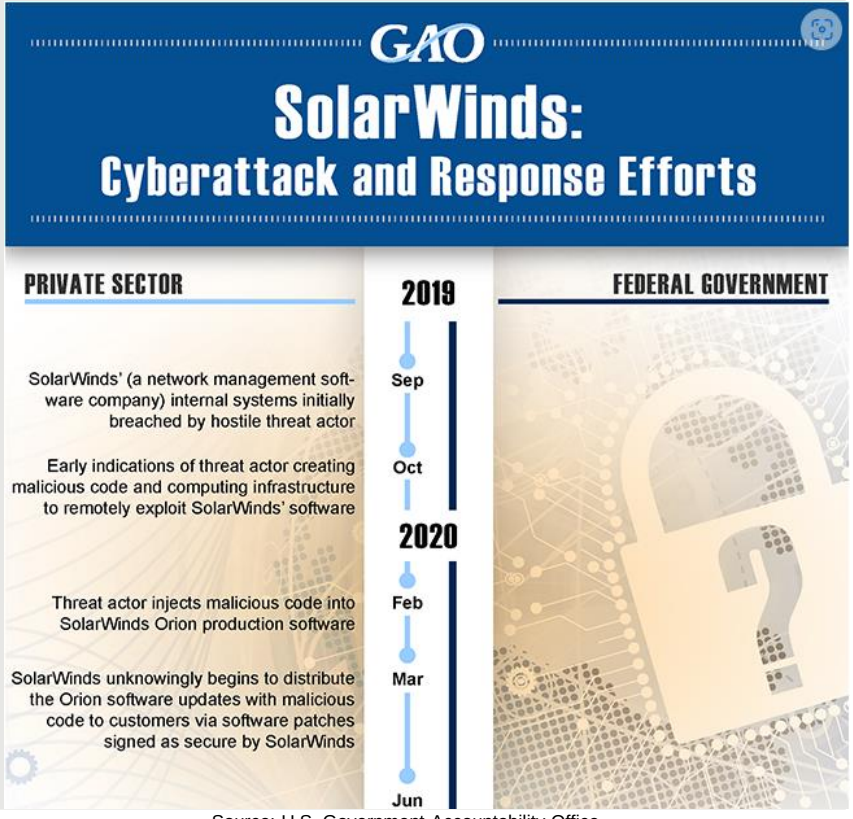
Source: Public Power Cyber Incident Response Playbook

Cybersecurity Incident Response Plan
KEY ELEMENTS

- **Communication plans**
  - Methods – cell phones, Slack, Teams, WhatsApp, Zoom, etc.
  - Technical response teams
  - Communication between groups or departments
  - External communications – law enforcement, public, partners, neighboring utilities

EXERCISE YOUR INCIDENT RESPONSE PLAN

- Practice the plan with a tabletop drill
  - Once a year seems reasonable
- Consider testing recent scenarios in the news
  - Supply chain watering hole attack
  - Insider threat: Stolen two-factor fob and USB key logger enables unauthorized computer use
  - Ransomware
- USE the plan during the exercise
- Train responders



Source: U.S. Government Accountability Office

Cybersecurity Incident Response Plan
LESSONS LEARNED MEETING

After testing your plan, hold a lessons learned meeting to improve the process and be better prepared for future incidents.

- How well did we perform?
- What information was needed sooner?
- What should we do differently next time?
- How could information sharing be improved?
- Can corrective actions be implemented?
- Did any steps inhibit recovery?
- Are additional tools or resources needed?
- Could this incident have been prevented?

Cybersecurity Incident Response Plan
LESSONS LEARNED FEEDBACK

- Plan was too long
  - Users wanted shorter plan or decision tree/checklist
- Communication plan didn't reflect reality
  - In early tests with just a few departments, participants met in a conference room to discuss scenarios
  - Later exercises (like nationwide GridEx) involved more departments, and participants worked at their desks to simulate a real event—identifying many communication challenges

Cybersecurity Incident Response Plan
LESSONS LEARNED IMPROVEMENTS

- Application architecture improvements
- Additional security cameras
- Penetration tests of specific networks
- Enhanced event notifications (e.g., after-hours alerts)
- Tools – network monitoring solution to store packet data for operational troubleshooting and forensic analysis

Cybersecurity Incident Response Plan
SUGGESTIONS

- Print response plans and related information (contact list, vendor information)
- Put the plan revision date in a header/footer on each page to identify the current version
- Establish delegates or backups for each role, so incident response isn't slowed when someone is not available
- Empower people to make decisions to facilitate efficient response (e.g., can a manager make the decision instead of a director?)
- Document incident response resources in your plan (contracted incident response service, government resources, insurance, etc.)

RESOURCES

- Public Power Cyber Incident Response Playbook (2019)
- NIST SP 800-61 Revision 2, Computer Security Incident Handling Guide (2012)
- NIST SP 800-82 Revision 3, Guide to Operational Technology (OT) Security (2023)
- NIST SP 800-83 Revision 1, Guide to Malware Incident Prevention and Handling for Desktops and Laptops (2013)
- NERC Cyber Intrusion Guide for System Operators (2023)
- CISA #StopRansomware Guide (2023)

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