



U.S. DEPARTMENT OF
ENERGY | OFFICE OF
Cybersecurity, Energy Security,
and Emergency Response

Clear Path IX Exercise Series After Action Report

June - September 2021





Table of Contents

Exercise Series Overview	1
Clear Path IX Overview.....	3
Clear Path IX Exercises	4
Unity of Message Functional Exercise	10
Social Media Drill	11
Unity of Effort Call Functional Exercises	14
Economic Recovery Seminar.....	18
Fuels Tabletop Exercise.....	21

Exercise Series Overview

Exercise Name	Clear Path IX
Exercise Dates	June-September 2021
Mission Areas	Response and Recovery
Core Capabilities	<ul style="list-style-type: none"> • Economic Recovery • Logistics and Supply Chain Management • Public Information and Warning • Operational Communications • Situational Assessment
Threat or Hazard	Catastrophic earthquake and tsunami
Scenario	A magnitude 9.0 earthquake occurs along the Cascadia Subduction Zone (CSZ), with a subsequent tsunami impacting the Pacific Northwest.
Sponsor	U.S. Department of Energy, Office of Cybersecurity, Energy Security, and Emergency Response
Point of Contact	<p>Brian Marko, Energy Sector Exercises Infrastructure Security and Energy Restoration Office of Cybersecurity, Energy Security, and Emergency Response U.S. Department of Energy Phone: (202) 718-4980 Email: Brian.Marko@hq.doe.gov</p>

Handling Instructions

The title of this document is *U.S. Department of Energy's Clear Path IX Series After Action Report*. The information provided shall only be released at the direction of the Program Manager; Energy Sector Exercises; Infrastructure Security and Energy Restoration; Office of Cybersecurity, Energy Security, and Emergency Response; U.S. Department of Energy.

The document is intended for use by trusted agents with a need to know and is not intended for public disclosure or dissemination unless otherwise approved by the U.S. Department of Energy.

For more information on this exercise and proper handling procedures for the document, please consult the following point of contact:

Brian Marko, Energy Sector Exercises
Infrastructure Security and Energy Restoration
Office of Cybersecurity, Energy Security, and Emergency Response
U.S. Department of Energy
Phone: (202) 718-4980
Email: Brian.Marko@hq.doe.gov

Clear Path IX Overview

Clear Path is the U.S. Department of Energy (DOE), Office of Cybersecurity, Energy Security, and Emergency Response's (CESER) annual all-hazards energy security and resilience exercise series. The Clear Path series brings together leading energy sector stakeholders to enhance policies and procedures, identify areas for collective improvement, and strengthen relationships and cooperation between industry and government energy sector partners.

The Clear Path series is the principal forum for enhancing the energy sector's ability to work together in response to catastrophic incidents. The series is a central pillar of DOE's efforts to constantly improve its ability to successfully meet its responsibilities as the Emergency Support Function (ESF) #12 Coordinator, the Sector-Specific Agency (SSA), and the Sector Risk Management Agency (SRMA) lead for the energy sector. The Clear Path series examines the energy sector's response and restoration roles, responsibilities, and plans and procedures following a catastrophic incident, stressing interdependencies between multiple critical infrastructure sectors.

The continued success of Clear Path is predicated on the support and involvement of federal, state, tribal, and local municipality government partners, cross-sector entities, and private sector organizations. To date, DOE has engaged over 1,000 energy sector and cross-infrastructure sector partners in previous Clear Path exercises. Recognizing the strong support and engagement from partner organizations, DOE strives to ensure that each new edition of Clear Path presents an increasingly realistic and challenging exercise experience for all participants.

The Clear Path series encompasses a diverse array of exercise scenarios challenging response officials and allowing planners to build upon corrective actions and validate improvements made in response to lessons learned from both exercises and real-world incidents.

DOE CESER hosted the ninth iteration of the Clear Path series throughout 2021. The scenario for Clear Path IX focused on the Cascadia Subduction Zone in the Pacific Northwest region, which includes the states of Alaska, Idaho, Oregon, and Washington. The scenario reflected the National Level Exercise (NLE) 2022 scenario where a 9.0 magnitude earthquake is followed by aftershocks and a major tsunami within the region.

Clear Path IX broke from the traditional format of the past where one single exercise was conducted and this year included a series of smaller in scope, interactive, focused exercises, concentrating on response and recovery. The exercises included drills, functionals, and a tabletop exercise. All exercises were conducted in a virtual environment during 2021 due to ongoing COVID restrictions.

Clear Path IX Exercises

EXERCISE	CONDUCT DATE	OBJECTIVES
Communications Drill	June 1-2, 2021	<ul style="list-style-type: none"> • Validate alternate communication systems and plans to communicate with industry and government partners when primary telecommunication systems are inoperable.
Public Information Functional	June 17, 2021	<ul style="list-style-type: none"> • Demonstrate the energy sector's <i>Unity of Message</i> coordination process in response to a catastrophic incident. • Develop and distribute accurate and timely public information messaging through social media platforms in response to a catastrophic incident.
Information Sharing Functional	June 30, 2021 (Oil & Natural Gas) July 29, 2021 (Electric)	<ul style="list-style-type: none"> • Identify essential elements of information that should be shared between industry and government partners to inform the decision-making process regarding stabilization and restoration of critical energy infrastructure following a catastrophic incident.
Economic Recovery Seminar	July 13, 2021	<ul style="list-style-type: none"> • Identify federal and state recovery programs available to private and public energy providers, program eligibility requirements, and how to access the programs after a federally declared disaster/emergency.
Fuels Tabletop	September 20, 2021	<ul style="list-style-type: none"> • Identify the state process for requesting activation of the federal emergency fuel assistance program. • Describe the roles and responsibilities of state and federal agencies during an activation of the federal emergency fuel assistance program. • Differentiate the roles and responsibilities of state and federal agencies in the coordination of delivery methods (air, ground, maritime) for fuel to state and federal distribution sites. • Identify the state and federal resources required for supporting fuel delivery and distribution during an activation of the federal emergency fuel assistance program.

Clear Path IX Exercise Series

After Action Report

Planning of the Clear Path IX series began in March 2021 and involved a diverse and well-balanced group of state and federal agencies as well as energy trade associations. This process ensured that the exercise objectives were representative of the needs of the DOE as well as the energy industry as a whole. In all, nearly 60 public and private sector organizations were involved in the planning process for the six exercises that were conducted.

This After Action Report contains the summaries of each exercise that was conducted during Clear Path IX.



U.S. DEPARTMENT OF
ENERGY | OFFICE OF
Cybersecurity, Energy Security,
and Emergency Response

Clear Path IX Exercise Communications Drill

June 1–2, 2021



Exercise Overview. The goal of the Clear Path IX Communications drill was to provide an opportunity for the energy community, government emergency management, and energy agencies to test alternate communication systems and plans concurrently. Participants were asked to contact partner agencies using alternative or backup communications systems that would normally be used during an emergency incident when landline and cellular telephones are unavailable.

Activity

Participation in the exercise included twelve different organizations in Oregon, Washington, Idaho, Colorado, Virginia, Texas, North Carolina, Hawaii, and Pennsylvania.

Participants used a variety of communications equipment to include satellite telephones, shared resource high frequency radio systems, and backup cellular telephones. Many lessons were learned during the drill and it provided an opportunity for participants to validate contact lists and equipment user guides, test equipment in various locations, and troubleshoot connectivity challenges.



OBJECTIVE

Validate alternate communication systems and plans to communicate with industry and government partners when primary telecommunication systems are inoperable.

CORE CAPABILITY

OPERATIONAL COMMUNICATIONS

Ensure the capacity for timely communications in support of security, situational awareness, and operations by all means available, among and between affected communities in the impact area and all response forces.

“While communications were somewhat challenging to establish, the drill brought together a cadre of providers who were ultimately able to establish communications across five states. The Communications Sector participants plan to repeat the drill later this summer to solidify operational lessons learned and build further proficiency with this alternate communications mechanism.”

“We practiced using satellite phones prior to the exercise. The biggest takeaway was that we had to be outside in order to complete the call. Not every user knew that because we rarely practiced using them.”

Lessons Learned

- ✓ Contact lists must be updated frequently. Personnel and contact information changes routinely in some organizations and it is important to have new contacts listed and distribution of contact resources throughout the organization.
- ✓ This drill encouraged participants to establish future training and exercise sessions for continued improvement.
- ✓ The exercise demonstrated the need to have alternate communication systems available. Relying on cellular or landline phones as the primary method of communication leaves organizations with potential communications outages during a disaster.





U.S. DEPARTMENT OF
ENERGY | OFFICE OF
Cybersecurity, Energy Security,
and Emergency Response

Clear Path IX Exercise Public Information Functional

June 17, 2021



Clear Path IX Exercise Public Information Functional

Exercise Overview. The Clear Path IX Public Information exercise consisted of two activities; conduct of a *Unity of Message* coordination call and a social media drill. Both activities were attended by industry, trade associations, and state and federal agencies. It was an opportunity for participants to share ideas, strategies, and lessons learned in developing and relaying critical public information messaging.

Unity of Message Functional Exercise

The goal of the Clear Path IX *Unity of Message* Functional Exercise was to familiarize the energy sector with the *Unity of Message* coordination call and provide an opportunity for the electricity industry and government partners to practice their roles during such a call. The exercise was conducted on a virtual platform system and was a great opportunity for all participants to familiarize themselves with a virtual platform.

The U.S. DOE, the Electricity Subsector Coordinating Council (ESCC) Secretariat, trade associations, and public affairs staff from impacted electricity providers used the coordination calls to discuss public messaging for an incident, and identify areas where industry and government messaging needs to be aligned. Exercise participants participated in a mock call to practice this.

Upon conclusion of the call, participants engaged in a facilitated discussion on messaging strategies, priorities, and identifying lessons learned.

Lessons Learned

- ✓ The *Unity of Message* calls will involve trade associations, government agencies, and possibly utilities outside of directly impacted areas because utilities are busy with initial response at the local level. This allows the industry to begin coordinating without interfering or burdening the local providers with additional responsibilities.
- ✓ Messaging priorities should focus on damage assessment, life safety (power lines, gas lines, use of generators, food safety, etc.), search and rescue efforts, communications usage (telephones vs. social media), resource needs and availability, sheltering, and restoration information. Individual priorities are based on local situations/circumstances, but it is important for the industry to be consistent with other partners to promote a unified message.

EXERCISE OBJECTIVE

Demonstrate the energy sector’s *Unity of Message* coordination process in response to a catastrophic incident.

CORE CAPABILITY

PUBLIC INFORMATION AND WARNING

Deliver coordinated, prompt, reliable, and actionable information to the whole community using clear, consistent, accessible, and culturally and linguistically appropriate methods to effectively relay information regarding any threat or hazard and, as appropriate, the actions taken, and the assistance being made available.

- ✓ This exercise provided a good orientation and general awareness of its purpose and intent. Participants suggested similar exercises be repeated prior to known hazard seasons, such as hurricane, wildfires, or other incidents.

“U.S. Department of Energy is working on creating a tool kit for a variety of incidents; this exercise helped with the creation of an earthquake message tool kit.”



Clear Path IX Exercise Public Information Functional

Social Media Drill

The goal of the Clear Path IX Social Media Drill was to provide public affairs personnel with challenging social media injects to encourage coordinated and collaborative messaging efforts. Participants were developed and distributed accurate and timely public information messaging through mock social media platforms in response to a catastrophic incident. Participation in the exercise included representation from both energy sectors and state and federal energy offices.

Players used a virtual conference system to discuss messaging strategy and content with other players to ensure a unified, clear, and accurate response to incoming messages and establish a social media campaign. A social media simulator was used to provide players with realistic social media messages from a simulated public. Players responded in real time, providing information on impacted areas, and restoration process to get basic services back online.

Players felt this was a great opportunity to practice how they would operate in a real incident and would like to see future drills conducted with a larger group. The drill demonstrated how trade associations and government agencies can amplify energy providers' messaging and support the local organizations during an incident. The drill also prompted some organizations to develop message templates that can be used in future incidents which will allow them to activate their social media campaign in a more rapid, organized fashion.

EXERCISE OBJECTIVE

Develop and distribute accurate and timely public information messaging through social media platforms in response to a catastrophic incident.

“The breakout sessions were a great way for us to communicate both within our trade, and with other organizations. We had another trade pop into our breakout session so we could create a unified message.”

“Very helpful—worked similarly to how the real situation would be!”





U.S. DEPARTMENT OF
ENERGY

OFFICE OF
Cybersecurity, Energy Security,
and Emergency Response

Clear Path IX Exercise

Information Sharing Functional

June 30, 2021 - Oil & Natural Gas Subsector

July 29, 2021 - Electricity Subsector



Clear Path IX Exercise Information Sharing Functional

Exercise Overview. The goal of the Clear Path IX Information Sharing/*Unity of Effort* call Functional Exercises was to familiarize the energy sector with the *Unity of Effort* coordination call format and provide an opportunity for the energy industry and government partners to practice their roles during a mock call. This was a great opportunity for all participants to familiarize themselves with the use of this virtual platform during this call process.

Unity of Effort Call Functional Exercises

The exercises began with the purpose and the objectives of a *Unity of Effort* coordination call. The format serves as a forum to conduct internal strategic and tactical meetings, provide incident situational awareness, provide updates on government and industry response activities, identify restoration priorities and limiting factors, and provide high-level identification of “top line” messaging and public affairs efforts.

Upon conclusion of the calls, participants engaged in a facilitated discussion on the response/restoration from a Cascadia Subduction Zone incident. Participants also determined action items and next steps in the simulated response efforts to include response priorities, logistics coordination, and information sharing requirements.

Lessons Learned and Participant Observations, Oil & Natural Gas Subsector

- ✔ Damage assessment will be an ongoing challenge as aftershocks occur and debris clearing efforts progress. Federal transportation partners will be able to share high-level assumptions of the status of major routes and transportation infrastructure as information becomes available. Input from states and locals will be reported upwards through Emergency Support Function (ESF) 1: *Transportation*, which then is shared with ESF 12: *Energy* colleagues, and then distributed to industry through mechanisms such as situation reports. This process is currently used during hurricane incidents and should be applicable for all hazards.
- ✔ The SHARES radio network (<https://www.cisa.gov/shared-resources-shares-high-frequency-hf-radio-program>) was cited as a reliable communication resource for information sharing during a catastrophic disaster. The SHARed RESources (SHARES) High Frequency (HF) Radio program provides an additional means for users with a national security and emergency preparedness mission to communicate when landline and cellular communications are unavailable. SHARES members use existing HF radio resources to coordinate and transmit messages needed to perform critical functions, including those areas related to leadership, safety, maintenance of law and order, finance, and public health.
- ✔ States will need assistance from federal partners in personnel staffing for command and control functions at the local and state levels. Staffing will need to be supplemented in emergency operations centers, staging areas,

EXERCISE OBJECTIVE

Identify the essential elements of information that should be shared between industry and government partners to inform the decision-making process regarding stabilization and restoration of critical energy infrastructure following a catastrophic incident.

CORE CAPABILITY

SITUATIONAL ASSESSMENT

Provide all decision makers with decision-relevant information regarding the nature and extent of the hazard, any cascading effects, and the status of the response.

“This collaborative work to identify issues, major resource needs, and industry status will be very important in order to start the response and recovery process during a catastrophic incident such as the one posed by a Cascadia Subduction Zone earthquake.”

Clear Path IX Exercise

Information Sharing Functional

command posts, base camps, etc. Each state will be responsible for coordinating this through their state emergency operations center using existing practices such as the Emergency Management Assistance Compact.

- ✓ Mutual aid programs for the natural gas industry exist at the regional and national levels. These programs have been well-practiced in both industry exercises and real-world incidents. Assistance can be shared without violating anti-trust issues; however, there may be a difference in qualifications/training or work and travel requirements (drug testing, union rules, etc.). International assistance poses an additional challenge because of these conditions as well as passport and visa issues. Recent COVID-19 impacts have also prohibited cross-border travel due to different requirements by involved countries.

Lessons Learned and Participant Observations, *Unity of Effort* Electricity Subsector

- ✓ International assistance will require coordination from federal authorities but is a valid option for resources. Communication and information from affected areas will be important to provide federal partners with situational awareness and resource needs so they can begin the process with Canadian entities to determine resource logistics, response requirements, where to stage, etc.
- ✓ Communication and information sharing will be the key to effective and efficient restoration efforts. Government and industry need to look at multiple platforms, both temporary and longer term, such as amateur radio, satellite telephone systems, and portable cellular repeaters which can all be rapidly deployed but will require planning and support to maintain. While many entities in the affected region have redundancy in emergency communications, this area should be further explored and tested to ensure the necessary equipment is available and interoperable throughout government and industry and personnel have been properly trained on its use.
- ✓ Hydroelectric facilities in the region appear to be survivable. They have been constructed to withstand earthquake effects and are positioned in elevated areas that would be protected from tsunamis and flooding.
- ✓ In the event of multiple disasters in different parts of the country, national mutual aid networks have developed plans on providing assistance based on geographic location. Resources would be coordinated and deployed based on availability and proximity to an incident.
- ✓ Many of the electricity providers and state energy agencies have identified key facilities and infrastructure within their consumer base and prioritized restoration efforts to include temporary power generation methods.



U.S. DEPARTMENT OF
ENERGY | OFFICE OF
Cybersecurity, Energy Security,
and Emergency Response

Clear Path IX Exercise Economic Recovery Seminar

July 13, 2021



Exercise Overview. The goal of the Clear Path IX Economic Recovery Seminar was to ensure that all industry members and subsectors understand available federal programs, eligibility requirements, and how to access these programs after a federally declared disaster or emergency.

Economic Recovery Seminar

During this seminar, subject matter experts from various federal agencies focused on answering the question of “what can federal recovery offices and programs do to support public and private sector energy providers in rebuilding their infrastructure and facilities, maintaining the financial obligations to their workforce, and stabilizing the financial impact to their organizations?” While it is recognized that there is not a “one size fits all” recovery program due to the diverse nature of private and public sector energy providers and federal funding regulations and requirements, this seminar allowed all members of the industry an opportunity to gain insight on what assistance was available post disaster to assist them in the rebuilding process.

Presentations were provided by:

EXERCISE OBJECTIVE

Identify federal and state recovery programs available to private and public energy providers, program eligibility requirements, and how to access the programs after a federally declared disaster/ emergency.

CORE CAPABILITY

ECONOMIC RECOVERY

Return economic and business activities (including food and agriculture) to a healthy state and develop new business and employment opportunities that result in an economically viable community.

Economic Development Administration



Small Business Administration



U.S. Dept of Agriculture— Rural Development Electric Programs



Federal Emergency Management Agency—Region X, Recovery



FEMA

Clear Path IX Exercise Economic Recovery Seminar

Each agency provided an overview of their current recovery funding programs and how each program operates. Information was also presented on the various types of disaster assistance available and eligibility requirements for public and private sector energy providers. Pre-disaster planning and preparedness to aid in the recovery process was included in the presentations along with application procedures for the variety of funding and support programs.

All presentations were recorded for those that could not attend the seminar and are [available at this link](#) (you will need to enter a password, **JsHes39T**, for access to the recording).



U.S. DEPARTMENT OF
ENERGY | OFFICE OF
Cybersecurity, Energy Security,
and Emergency Response

Clear Path IX Exercise Fuels Tabletop

September 20, 2021



Exercise Overview. The goal of the Clear Path IX *Fuels Tabletop Exercise* was to improve the overall understanding of the federal resources and capabilities available to support fuel operations in Oregon and Washington in the aftermath of a catastrophic earthquake along the Cascadia Subduction Zone Fault.

Fuels Tabletop Exercise

The purpose of the Fuels Tabletop Exercise was to improve the overall understanding of the federal resources and capabilities available to support fuel operations in states in the aftermath of a catastrophic earthquake along the Cascadia Subduction Zone Fault. Participants discussed federal protocols for states requesting fuel assets, and the lead agencies tasked to carry out specific fuel missions, and the logistics coordination requirements for receiving fuel resources post earthquake. This exercise also provided federal agencies an opportunity to understand the expectations and capabilities of state partners during a catastrophic incident regarding fuel priorities and strategies. The lessons learned from the Clear Path IX Fuels Tabletop will assist the states in further developing their emergency fuel action plans.

During the tabletop scenario modules, participants discussed the coordination required at the state and federal levels to ensure a rapid and robust emergency fuel plan activation to ensure the required resources and logistical needs were met for response and recovery.

Lessons Learned and Participant Observations

The Clear Path IX Fuels Tabletop Exercise presented participants with a magnitude 9.0 earthquake scenario along the 700-mile length of the Cascadia Subduction Zone (CSZ), with an epicenter 95 miles off the coast of Oregon west of the city of Eugene with a resulting tsunami that inundated the west coast. Participants discussed the coordination required at the state and federal levels to ensure required resources and logistical needs were met for response and recovery. The following items were identified for further planning and development for the emergency fuel plan process.

- ☑ The exercise allowed state and federal partners an opportunity to discuss the emergency fuel plan process prior to a real-world incident. By bringing together the appropriate stakeholders, participants were able to identify the necessary actions required to improve coordination and collaboration to improve emergency fuel planning.
- ☑ While the federal government begins their response and deploys an initial fuel package, it is for federal response assets only. States may have to rely on in-state resources in the initial stages of a catastrophic incident. Additionally, the emergency fuel program is only available to states during a federally declared emergency.

EXERCISE OBJECTIVES

- Identify the state process for requesting activation of the federal emergency fuel assistance program.
- Describe the roles and responsibilities of state and federal agencies during an activation of the federal emergency fuel assistance program.
- Differentiate the roles and responsibilities of state and federal agencies in the coordination of delivery methods (air, ground, maritime) for fuel to state and federal distribution sites.
- Identify the state and federal resources required for supporting fuel delivery and distribution during an activation of the federal emergency fuel assistance program.

CORE CAPABILITY

LOGISTICS AND SUPPLY CHAIN MANAGEMENT

- Deliver essential commodities, equipment, and services in support of impacted communities and survivors, to include emergency power and fuel support as well as the coordination of access to community staples.
- Synchronize logistics capabilities and enable the restoration of impacted supply chains.

Clear Path IX Exercise

Fuels Tabletop

- ☑ Oregon and Washington are in the process of developing pre-scripted, mission ready packages that include fuel requests for quantity and type. This would be beneficial because the fuel assistance process from the federal government can be immediately started after a catastrophic incident in the event communications are down and a formal request cannot be submitted.
- ☑ Prioritization of distribution to affected states is not immediately apparent. In a multi-state incident, the federal government will have to assess each request individually and then determine how the fuel packages will be allocated based on the greatest need, available fuel resources, and the ability to access the area. This adjudication for scarce resources will be addressed at the headquarters level of the Federal Emergency Management Agency. It is important for the states to submit a timely and detailed request of their needs to aid in this prioritization process. A fuel task force would also be implemented with appropriate state and federal agencies to assist in the multi-state assessment and coordination of needs. This would also allow for implementation of waivers for the transportation element.
- ☑ It is recognized that in a multi-state incident or when there are multiple incidents throughout the country, one vendor will not have the necessary assets to meet the needs of all locations.

