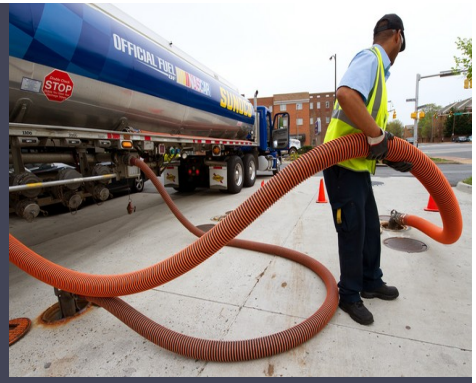

San Diego County Energy Resilience Plan

2015 Update

Background

- OES began developing the Energy Resilience Plan (ERP) in 2010.
- The Lifelines Emergency Coordination Group (LECG) was established to review on behalf of the key agencies that would be involved in responding to an energy emergency.
- Original plan focused on three key energy resources: electric power, natural gas (including propane) and petroleum.

Purpose

- The ERP addresses issues associated with a major energy disruption affecting the San Diego County Operational Area.
  - Provides a coordinated framework from which all responding agencies can respond to mitigate the impacts of a significant energy disruption.
  - Delineates the roles, responsibilities, and emergency response actions

Scope

- The ERP has been expanded to include the water and wastewater sectors:
  - Electric Power
  - Natural Gas
  - Fuel
  - Water
  - Wastewater

Update Process

- New format
  - Two part plan. Part I – Regional Energy Overview and Part II – Concept of Operations
- One-on-one meetings with industry stakeholders, discussing vulnerabilities and emergency procedures
  - Including survey of jurisdictional critical facilities
- Lifelines Emergency Coordination Group review meeting

ERP Format

- Part I – Regional Energy Overview
  - Introduction
  - Situation and Assumptions
  - Hazards and Existing Mitigation Strategies
  - Roles and Responsibilities
  - Energy Sector Vulnerabilities and Recommended Mitigations
  - Legal Authorities and References
- Part II – Concept of Operations
  - Emergency Response Phases
  - Response Actions
  - Local, State, and Federal Resources

Hazards and Existing Mitigation

Provider	Hazard	Existing Mitigation Strategies
SDG&E	Earthquakes	▪ Reinforced electrical systems near known faults. ▪ Mutual Assistance Agreements. ▪ Fiber optic lines underground that are more resistant and less susceptible to earthquake damage than overhead lines.
	Terrorist Attack	▪ Terrorist Response Plan – Repair workers are sent with security escorts to assess the situation before repairing transmission lines. ▪ Ensure that cyber security measures that are in place are appropriate and adequate.
	Electricity Disruption	▪ Load Curtailment Plan – SDG&E can shed loads of electrical customers to ensure stability of the electrical system, however critical infrastructure and dependent customers are exempt.
	Natural Gas Line Rupture/Severe Disruption	▪ Redundant lines: 12” coastal pipeline, 16”, 30” and 36” inland pipelines, and numerous interconnect lines help to ensure continued supply if one line is ruptured. ▪ Gas curtailment to interruptible customers could occur if gas supplies from SoCalGas are projected to be less than system demand. SDG&E would implement gas curtailment by requesting its interruptible customers (typically large non-residential customers) to avoid using gas. ▪ There are specific guidelines regarding gas curtailment and meter shut off if it became necessary and appropriate to mitigate the impact of a system capacity or supply shortfall by closing individual meter valves.

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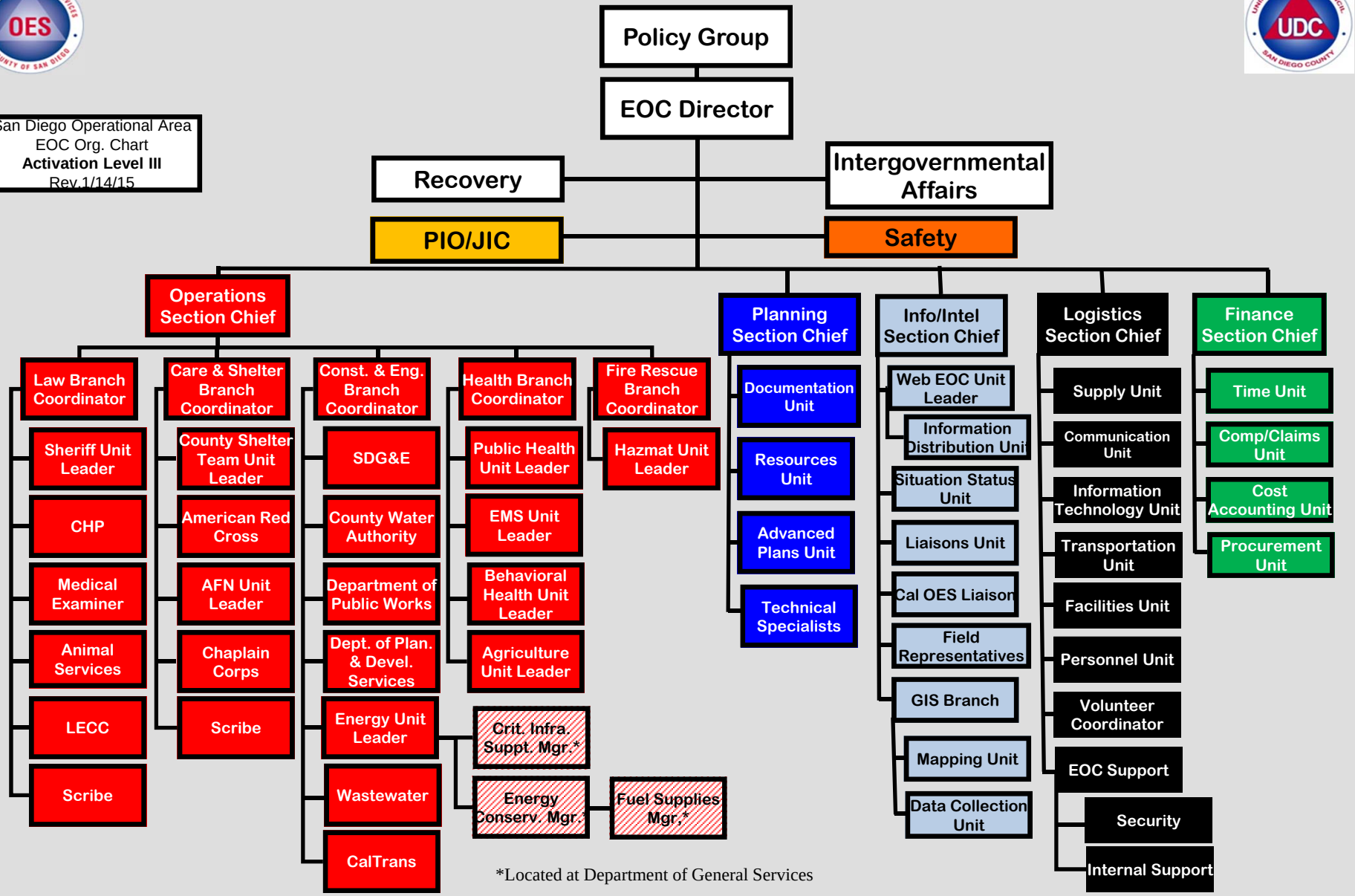
Organization Chart

San Diego Operational Area
EOC Org. Chart
Activation Level III
Rev.1/14/15



*Located at Department of General Services

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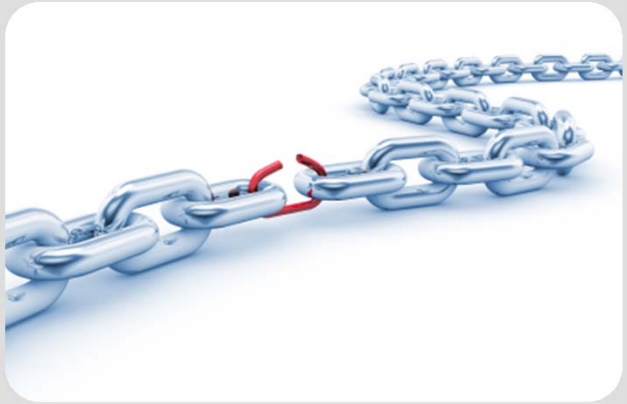

Recommended Mitigations

Sector	Vulnerability	Alternative Operations	Recommended Mitigation	Responsible Party
Electricity	If SDG&E loses all power to the grid, a "Black Start" procedure is necessary to bring power back online; therefore power restoration priorities cannot be easily accommodated. Many critical facilities rely on back-up generation as their contingency for a power disruption. A true black start would take a minimum of 24-hours to restore power.	N/A	For any critical facility requesting a generator, in order to expedite the process, SDG&E recommends the following: • Ensure the facility has adequate access so that the generator can be pulled up directly to the switch gear. • Have the facility pre-wired to receive the generator (i.e. Plug-and-Play methodology).	• All facilities that are deemed critical (i.e. hospitals, water treatment plants, wastewater facilities, etc.) • Local jurisdictions
Electricity	SDG&E identified in 2011 that when attempting to equip hospitals with a portable generator, it was nearly impossible to connect the generator(s) due to inadequate spacing.	N/A	Coordinate with all hospitals and assess their generator locations and determine if there is adequate space for portable generator connectivity.	• Hospital Association of San Diego and Imperial Counties

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Emergency Response Phases

1. Preparedness Phase
2. Increased Readiness Phase
3. Alert Phase
4. Response Phase

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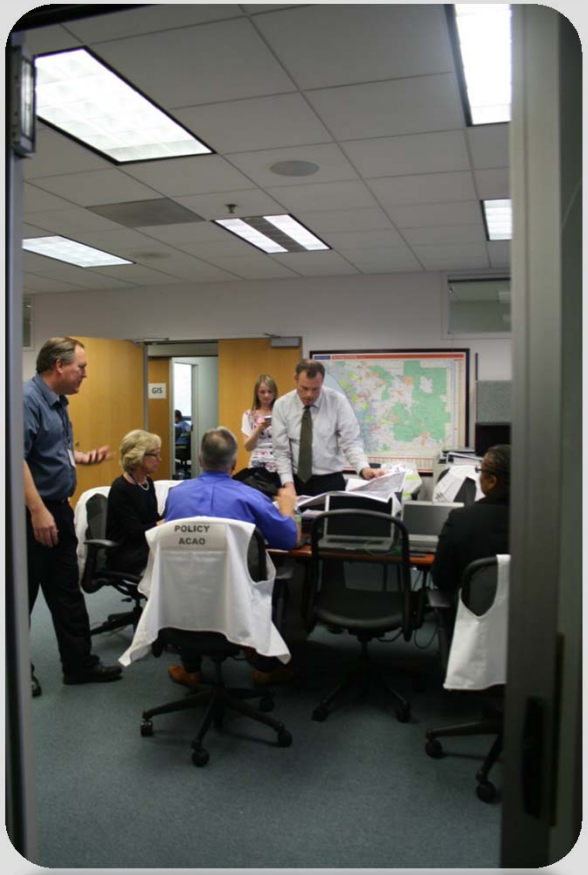

Alert Actions

Office of Emergency Services (OES)
Actions at Alert

For all Energy Disruptions:
• Ensure that on-call 24/7 emergency contact information for regional partners is current.
• Establish contact/communications with partner agencies.
• Alert local governments (law enforcement, fire, emergency medical, public works, etc.) of potential disruptions.
• Compile all safety assessments for the OA.
• Ensure that alerts, notifications, and situational updates to management, regional and state agencies are maintained throughout the event.
• Consider proclaiming a Local Emergency.
  o Upon a decision from the Policy Group to proclaim, draft a Proclamation of Local Emergency.
• Consider EOC activation – Level I or II.
  o Utilize AlertSanDiego for activation notifications

Power Failure: • In coordination with DGS consider implementation of voluntary reduction of electric power and natural gas consumption in accordance with Cal ISO and SDG&E, working through the County Communications Office (CCO). • Monitor status of schools and closures, via SDCOE. Evaluate geographical areas affected by the cascading effects of the event and notify stakeholders.

Fuel Shortage:
• Encourage Board of Supervisors to:
  o Implement voluntary rideshare, public transit, and alternative work pattern programs.
  o Advise all County departments and employees to curtail non-essential travel and increase use of carpools.
  o Issue public appeals for voluntary conservation, working through the CCO.
• Instruct CCO to disseminate messaging to prevent or limit panic buying or hoarding of fuel.
• Warn against price gouging as appropriate.

Natural Gas Disruption/Shortage: • Coordinate with SDG&E to understand status of natural gas supplies, deliveries, and demand. • Consider the effects of natural gas curtailments and implement life safety measures as appropriate.   o Consult with SDG&E to understand scope of curtailments and potential impacts. • Consider issuing public appeals for voluntary conservation.
Water Disruption/Shortage: • Coordinate with the SDCWA for a situation report on supply disruption, status of water supply, and status of all member agencies. • Consider the need to establish Points of Distribution to distribute commodities (i.e. bottled water) • Coordinate with Cal OES to identify process for employing the emergency bottled water contract. • Coordinate with SDCWA and member agencies to develop coordinated public messaging.
Wastewater System Failure: • Coordinate with wastewater agencies or central point of contact to understand the scope of the wastewater emergency. • Coordinate with public health and wastewater representatives to understand the impact to public health.

Response Actions

Policy Group
Actions at Response
For all Energy Disruptions: • Monitor the status of the energy disruption • Forecast any potential life safety concerns • Provide decision making on resource priority issues based on life safety

Power Failure:
• Proclaim Local Emergency if Board of Supervisors (BOS) is not in session.
• EOC Activation – Level III
• Consider enactment of curfews for impact area(s).
• Decide on opening of School/Community Center Portable Generator Sites (or "charging stations").
• Provide SDG&E with a list of critical facilities within the OA that should receive priority restoration.
  o SDG&E will provide the priority list to its Transmission and Distribution Emergency Centers
  o Based on the restoration of the grid, SDG&E Transmission and Distribution will determine if it is possible to restore the critical facilities as power is restored incrementally region-wide.
  o See Section V – D. Critical Infrastructure Profile and Restoration Priorities.
• Determine which critical facilities will receive available generators from the available generator cache (i.e. SDG&E, DGS, etc.) and advise C&E Branch to establish a coordinated system to fuel and maintain generators providing power to critical facilities and those providing essential services.

Fuel Shortage:
• Issue mandatory conservation measures, as appropriate - consider and implement mandatory measures and recommend additional voluntary conservation measures as appropriate to mitigate a severe and/or long-term shortage or disruption.
  o Mandatory conservation measures include:
  ▪ Eliminate nonessential driving
• Provide the SoCo Group a priority fueling/refueling list.
  o List will include Cities, hospitals, and other critical facilities.

Natural Gas Disruption/Shortage:
• Issue conservation measures, as appropriate - consider and implement mandatory measures and recommend additional voluntary conservation measures as appropriate to mitigate a severe and/or long-term shortage or disruption.
  o Conservation measures include:
  ▪ In cold weather, set thermostat on central heating unit to 58 degrees F during the day and 55 degrees F or lower at night, provided there are no health hazards.

Water Disruption/Shortage: • Based on the duration of the disruption, direct staff to prepare a Proclamation of Local Emergency, if appropriate. • Support SDCWA requests for appropriate actions. • Determine whether Points of Distribution (PODs) are necessary.   o Determine location of PODs.
Wastewater System Failure: • Continue to monitor the status of the wastewater infrastructure region-wide • Ensure appropriate public messaging is being addressed.

Rank	Critical Infrastructure Restoration Priorities	
	Power Restoration/Generator Distribution	**Fuel Supply**
Black Start A black start is the process of restoring a power station to operation without relying on the external electric power transmission network.	• Trauma Hospitals • 911 Communication Centers • City/County EOCs • Military Bases/Civil Defense Facilities • Air Traffic Control **Note: In a Black Start, as power is being restored from a central location, SDG&E will attempt to restore power to the types of facilities listed above, ONLY IF the facilities are in the path of restoration, meaning the critical facilities have distribution lines connected directly to the substation. In addition to being connected directly to the substation, the critical facilities' electric load must be capable of being added without jeopardizing the system stability and causing a failure.**	N/A

Critical:
 	
Failure to restore promptly may result in death, injury, severe financial loss or legal liability.
	• Emergency Services:
	  o Law Enforcement stations
	  o Fire stations
	  o Paramedic stations
	  o City/County Emergency Operations Centers (EOCs)
	  o Emergency communication systems (911 dispatch operations; AlertSanDiego)
	• Medical
	  o Trauma Hospitals
	  o Hospitals
	  o Skilled Nursing Facilities (SNFs)
	  o Behavioral Health treatment facilities
	  o Specialized treatment centers
	  o Rehabilitation centers
	  o Residents dependent on oxygen/respirator equipment, etc.
	• Transportation
	  o Traffic signals (major ones only)
	  o Air traffic control
	• Communication (wireless, satellite, broadcasts)
	• Information technology (internet service providers)
	• Military Bases/Civil Defense Facilities
	• Residential and Commercial Electricity
	• Residential and Commercial Natural Gas
		For facilities with back-up generators and associated vehicles (if applicable):
		• Trauma Hospital Generators
		• Hospital Generators
		• 9-1-1 Center Generators
		• EOC Generators
		• Fire vehicles
		• Police, Sheriff, CHP vehicles
		• Ambulances
		• Air Traffic Control Generators
		• Communication (wireless, satellite, broadcasts)
		• Information technology (internet service providers)
		• Skilled Nursing Facilities (SNFs)
		• Behavioral Health treatment facilities
		• Specialized treatment centers
		• Rehabilitation centers

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Local, State, and Federal Resources

Energy Resources			
Energy Sector	**Local**	**State**	**Federal**
Electricity	▪ SDG&E maintains a cache of portable generators (34) that can be prioritized and distributed to essential facilities ▪ County of San Diego Department of General Services maintains a cache of portable generators (8) that can be prioritized and distributed to essential facilities ▪ County of San Diego HHSA-EMS also has a cache of portable generators that may be used for non-EMS purposes if necessary. These generators serve EMS related purposes first but can be reassigned if they are not tasked. ▪ County of San Diego DGS also has a right-of-first refusal agreement with local vendor Hawthorne for generators.	▪ Cal OES will work with the CUEA to identify electrical resources for the OA.	▪ OA participation in the United States Army Corps of Engineers generator database allows for the USACE to deploy with necessary generator requirements to the OA.

Next Steps

- The ERP will be exercised during the May 20th capstone exercise to identify gaps in the plan.
- Distribution of draft ERP on May 5th.
- The LECG will meet post-exercise to discuss the ERPs performance during the exercise.