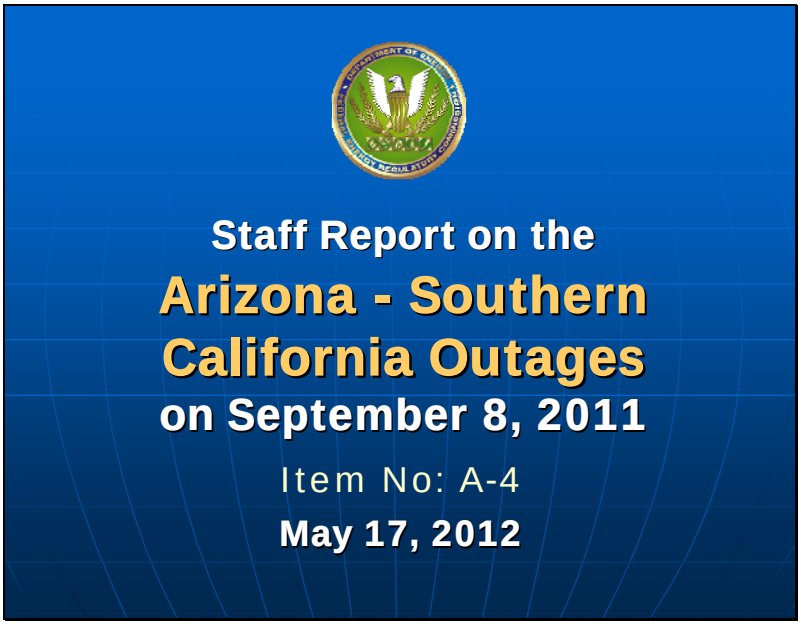
Slide 1



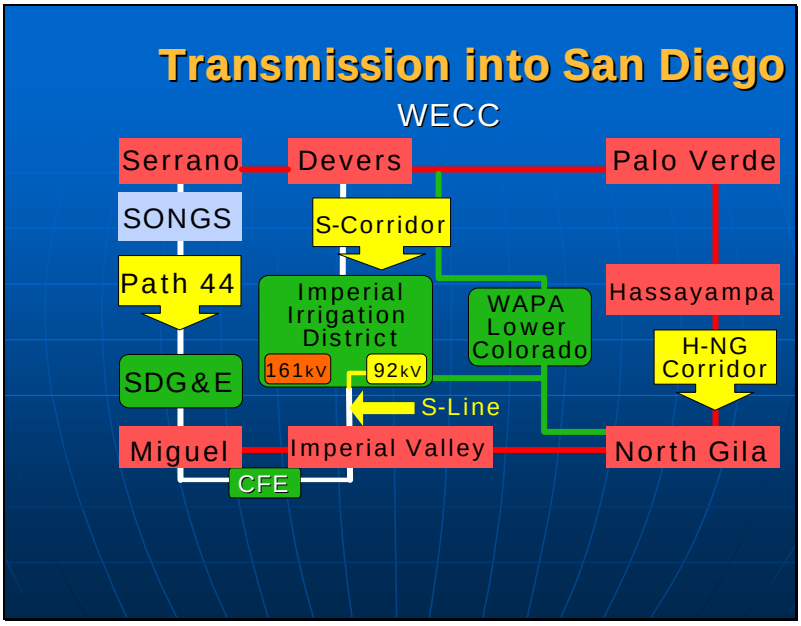
Mr. Chairman, Commissioners, I am pleased to present a summary of the FERC/NERC Staff Report on the September 8, 2011 Blackout. *The presentation is based on conclusions of the staff and not necessarily those of the Commission, the Chairman or any of the individual Commissioners.* This inquiry was truly a collaborative effort, with representation from the Offices of Enforcement, Electric Reliability, Energy Policy & Innovation, and External Affairs. As you know, it was a joint inquiry with the North American Electric Reliability Corporation, and we also had liaisons from the Nuclear Regulatory Commission and Department of Energy. I would also like to ask those who participated in the inquiry to stand and be recognized.

On September 9, 2011, the Commission and NERC announced a joint inquiry into the causes of the widespread, cascading blackout of portions of Arizona, Southern California, and Baja California, Mexico that occurred on September 8, 2011. Approximately 2.7 million customers lost power during the event, including the entirety of San Diego, making the September 8th blackout the largest power failure in California history. The inquiry was completed and its report, published jointly by NERC and the Commission, was released in eight months. We thank NERC for its cooperation and contributions to the inquiry.

The inquiry obtained approximately 20 gigabytes of data from approximately 500 data requests; conducted numerous site visits, meetings, and depositions to gather information from the affected entities; and conducted numerous outreach meetings with members of the electric industry, including the Edison Electric Institute, the North American Transmission Forum, the American Public Power Association and the National Rural Electric Cooperative Association.

I will briefly describe what happened in the 11 minutes before the blackout, and then highlight key findings and recommendations from the inquiry's report.

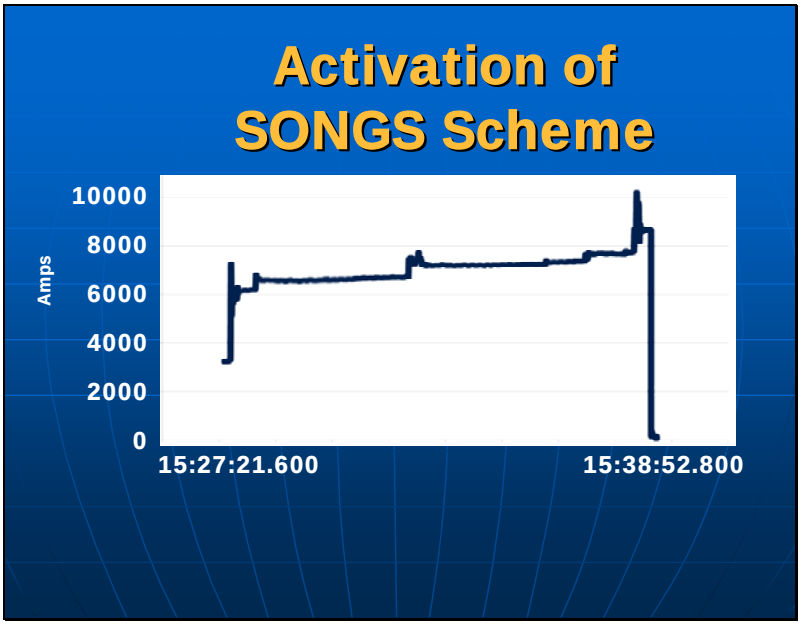
Slide 2



The inquiry determined that the blackout began with the loss of a single facility: Arizona Public Service's 500 kilovolt transmission line from Hassayampa to North Gila. The loss of this line interrupted one of the three major power corridors into the San Diego area, labeled on this simplified diagram as H-NG Corridor, S-Corridor, and Path 44. The red lines represent 500 kilovolt lines, the white lines represent 230 kilovolt lines, and the green lines represent 161 kilovolt lines. When the H-NG Corridor was interrupted, power flows immediately redistributed through lower voltage systems, such as those in the Imperial Irrigation District and WAPA Lower Colorado (shown as the S Corridor), in order to deliver enough power to San Diego on a hot day during hours of peak demand. Flows also redistributed onto the five 230 kilovolt lines that form Path 44, also known as South of San Onofre Nuclear Generating Station, or SONGS, increasing its flow by 84%.

However, the Bulk Electric System is required to be operated in a manner that avoids instability, uncontrolled separation and cascading, even with the occurrence of any single contingency, such as the loss of a generator, transformer or transmission line. This is known as the "N-1 criterion." The fact that the loss of a single transmission line led to cascading demonstrated that on September 8, 2011, the Western Interconnection was not being operated within a secure N-1 state.

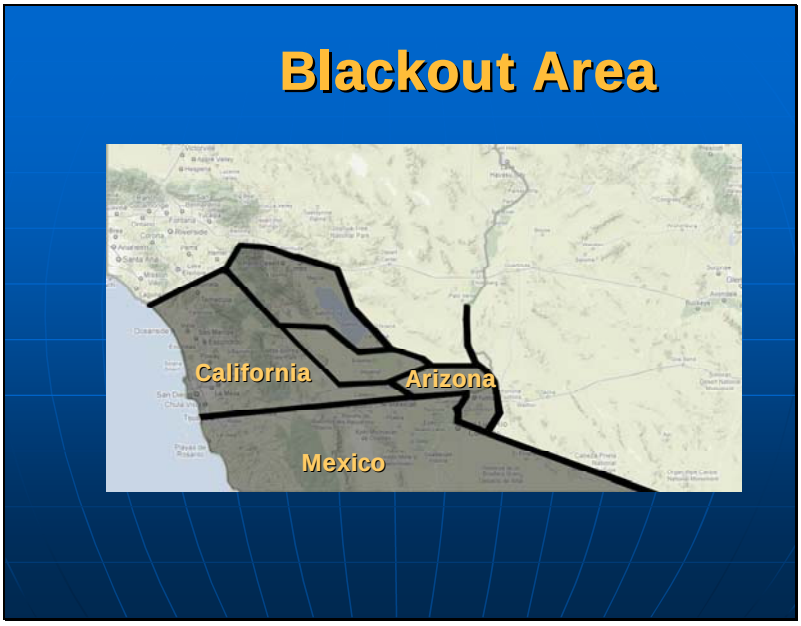
Slide 3



The inquiry divided its sequence of events into seven distinct phases, beginning with the initial trip of the H-NG transmission line and culminating in the initiation of an intertie separation scheme (the SONGS separation scheme) which separated San Diego and Path 44 at SONGS. This slide shows a simplified version of the loading on the five 230 kilovolt lines that form Path 44 (also known as South of Songs). When the aggregate current on Path 44 remained over 8,000 amperes, the SONGS separation scheme would separate San Diego from Path 44. The first spike on this slide resulted from the loss of the Hassayampa-North Gila 500 kV line, and the next two spikes resulted from the loss of below-100-kilovolt transformers in the Imperial Irrigation District.

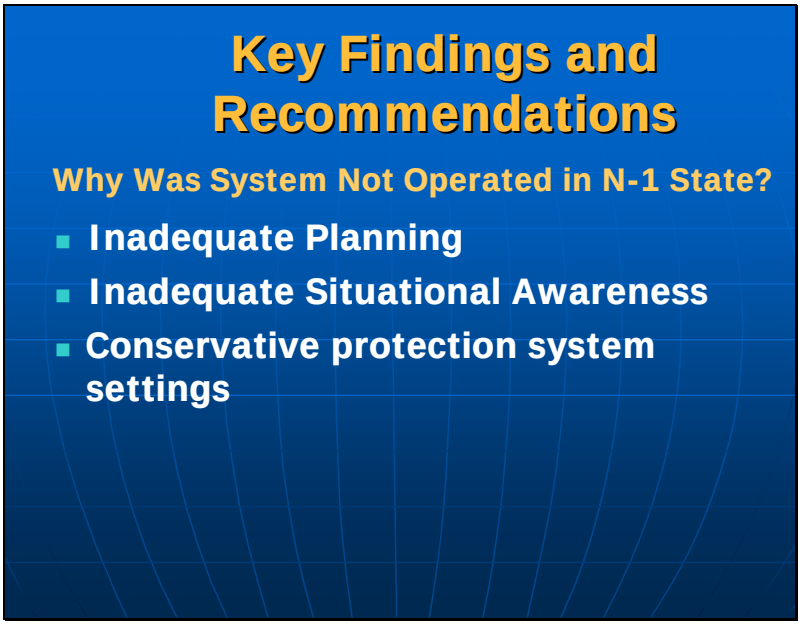
The flow and voltage deviations and resulting overloads that began with the loss of the Hassayampa-North Gila 500 kV line had a ripple effect, as transformers, transmission lines, and generating units tripped offline, most of which had the effect of increasing the loading on Path 44, as seen on this chart. Just seconds before the blackout, Path 44 carried all flows into the San Diego area as well as part of Arizona and Mexico. Eventually, the excessive loading on Path 44 engaged the SONGS separation scheme, separating San Diego from Path 44, causing both SONGS nuclear units to trip offline, and resulting in the complete blackout of San Diego. The time elapsed, from line trip to complete blackout, was approximately 11 minutes.

Slide 4



This slide shows the balancing authority/transmission operator areas affected by the blackout (and the islands into which they separated before the blackout).

Slide 5



The inquiry identified 27 findings and recommendations to prevent the recurrence of events like the September 8th blackout, but we would like to focus on five key areas. Several of these areas of concern were also seen in the 2003 Blackout, namely planning, situational awareness, and protection systems. Appendix C to our report compares the 2003 and San Diego blackouts in these three areas. The following factors help explain why the system was not being operated in an N-1 state, as required.

First, the inquiry determined that, over every planning horizon (operations, short-term and long-term), the planning process in the WECC region lacked effective depth, breadth and coordination. Many of the affected entities' seasonal, next-day, and real-time studies do not adequately consider:

- Operations of facilities in external networks, including transmission outages, generation levels, and load forecasts,
- External contingencies that could impact their systems, or internal contingencies that could impact their neighbors' systems, and
- The impact on Bulk-Power System reliability of internal and external lower-voltage facilities, especially those operated at less than 100 kilovolts.

In order to improve planning in the WECC region, the inquiry recommends that Transmission Operators and Balancing Authorities, as appropriate:

- Obtain information on neighboring entities' operations, including transmission outages, generation levels, load forecasts, and scheduled interchanges,
- Identify and plan for external contingencies that could impact their systems, and
- Consider the impact of sub-100 kilovolt facilities on their systems' reliability.

Second, the inquiry determined that many entities lacked adequate real-time situational awareness of conditions and contingencies throughout the Western interconnection. Many entities' real-time tools, such as Real-Time Contingency Analysis, are restricted by models that do not accurately reflect the status of external

networks. Some entities' real-time tools are also insufficient to alert operators to significant conditions or potential contingencies on their or their neighbors' systems. The lack of adequate situational awareness limits entities' abilities to prevent instability, uncontrolled separation, or cascading outages. The inquiry determined that if some of the affected entities had been aware of real-time external conditions at the time of the event, they would have been better prepared for its impacts and may have avoided the cascading that occurred.

In order to improve the situational awareness of grid operators, the inquiry recommends that entities:

- Expand external visibility in their real-time models through more extensive data sharing with nearby entities,
- Improve the use of real-time tools to ensure constant monitoring for potential contingencies, and
- Improve communications among entities to help maintain situational awareness.

The inquiry also found some significant issues with protection system settings, which contributed to the cascading nature of the event. Some entities set their overload relay trip points for facilities extremely close to those facilities' emergency ratings, resulting in those facilities being automatically removed from service without providing operators enough time to mitigate overloads. The inquiry determined that, had trip points been set to allow for higher loading levels, operators may have had time to mitigate overloads and prevent cascading outages during the event. To avoid a similar problem in the future, the inquiry recommends that Transmission Owners review their facilities' overload protection relay settings. The report suggested PRC-023 as a guideline for relay loadability settings.

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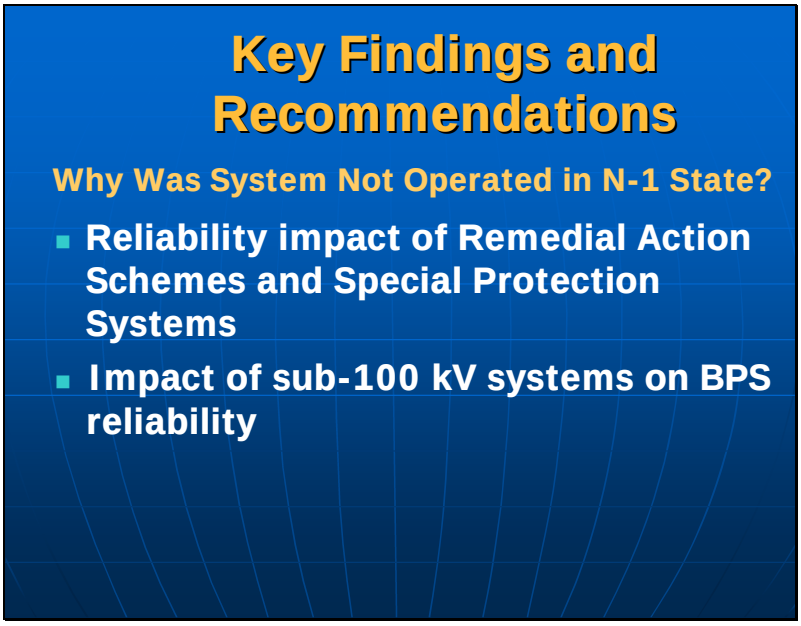
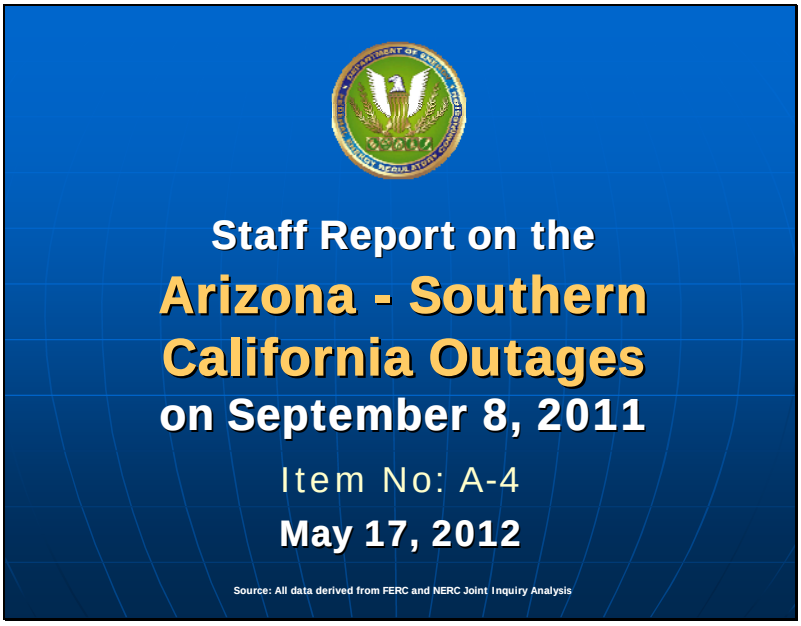


Next, the inquiry determined that entities did not adequately assess and study the reliability impact of special protection systems, remedial action schemes, and safety nets. The operation of one such safety net, the SONGS separation scheme, had a significant impact on BPS reliability, separating San Diego and resulting in the loss of both SONGS nuclear generators. Nevertheless, none of the affected entities, including the owner of the scheme, studied its impact on system reliability, leaving them without a full understanding of the state of their systems during the event. Another special protection system/remedial action scheme (RAS) which operated on September 8th, the S Line RAS, was likewise not sufficiently studied and uncoordinated, and contributed to the cascading nature of the event. The inquiry recommends that all special protection systems and separation schemes, including safety nets, should be studied to understand their impact on system reliability and to ensure their operation does not have unintended or undesirable effects.

Finally, the September 8th event highlights the impact that even low voltage facilities can have on the reliability of the bulk-power system. The inquiry discovered that the WECC Reliability Coordinator and the affected entities do not consistently recognize the adverse impact that sub-100 kilovolt facilities have on BPS reliability, especially lower-voltage facilities which operate in parallel to higher voltage systems. The prevailing System Operating Limits and Path Ratings in the region did not take into account facilities which, although not designated as part of the Bulk Electric System, contributed to and caused the cascading blackouts of September 8, especially three 230/92 kV transformers within the Imperial Irrigation District's footprint. The inquiry determined that if these facilities had been designated as part of the Bulk Electric System or otherwise incorporated into planning and operations studies, and monitored in real time, cascading outages could have been avoided on the day of the event. Accordingly, the inquiry recommends that, regardless of voltage level, facilities that can have an adverse impact on bulk-power system reliability be considered for classification as part of the Bulk Electric System or otherwise studied as part of entities' planning in various time horizons and monitored and alarmed in real time.

Slide 7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Arizona - Southern California Outages
on September 8, 2011
Item No: A-4
May 17, 2012
Source: All data derived from FERC and NERC Joint Inquiry Analysis