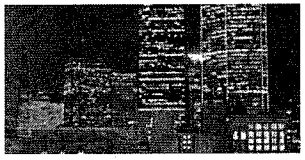
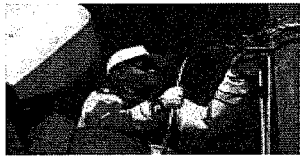
ERCOT System Emergency – Feb 2011
Senate Joint Committee Hearing

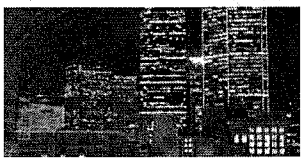
ERCOT Emergency – Overview

ONCOR

- **Unprecedented emergency – The unplanned loss of generation during a period of high demand on February 2 forced ERCOT to direct utilities to shed 4,000 MW of load, which:**
  - **Was four times as large as the last load-shedding event in 2006.**
  - **At its peak, impacted approximately 283,000 customers in Oncor's service area.**
  - **Overall, impacted more than 1.3 million, or 45% of Oncor's customers, in rotating outages throughout the event.**
- **Preparation – Oncor participates in simulations and conducts extensive training to prepare for ERCOT emergency directives.**
- **Rapid response ensured grid reliability – Oncor quickly acted on ERCOT's directives to shed load.**

Emergency Load Shedding

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- **Necessary when electric supply cannot support the level of demand.**
- **Executed under the direction of grid operators like ERCOT.**
- **Employed by utilities as an *emergency* response measure.**
- **Utilized to restore stability to the System.**
- **Is executed manually using a pre-planned process, or automatically through the use of under-frequency relays.**

Without the ability to shed load, the System potentially becomes imbalanced and can lead to a blackout scenario.

Emergency Events – Preparation Activities

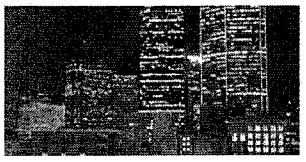



ONCOR

- Establishes emergency planning processes.
- Trains its workforce to address emergency situations through numerous drills and simulations, including:
  - ERCOT-coordinated Drills;
  - Annual Black Start and Short Supply Training; and
  - Annual Emergency Restoration Plan Drills.
- Maintains and tests its under-frequency relays which shed load automatically when frequency drops to prescribed levels.
- Reviews its load shed plan twice per year to ensure its ability to provide prescribed load shed amounts when directed.

Oncor prepares throughout the year to handle emergency situations In order to help preserve the integrity of the System.

Emergency Load Shedding – Buildup

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- ERCOT directs utilities to reduce voltage (EEA – 2A).
- ERCOT drops Load Resource customers (EEA – 2A).
- ERCOT directs interruptible customers to drop within a 15 minutes period (EEA – 2B).
- ERCOT directs utilities to shed load per load shedding plans (EEA – 3).
- ERCOT directs utilities to restore power.

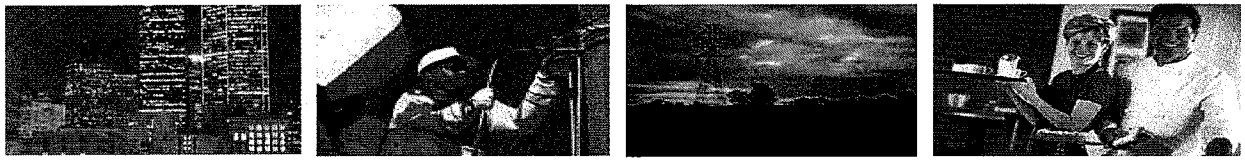
Previous Load Shedding Events

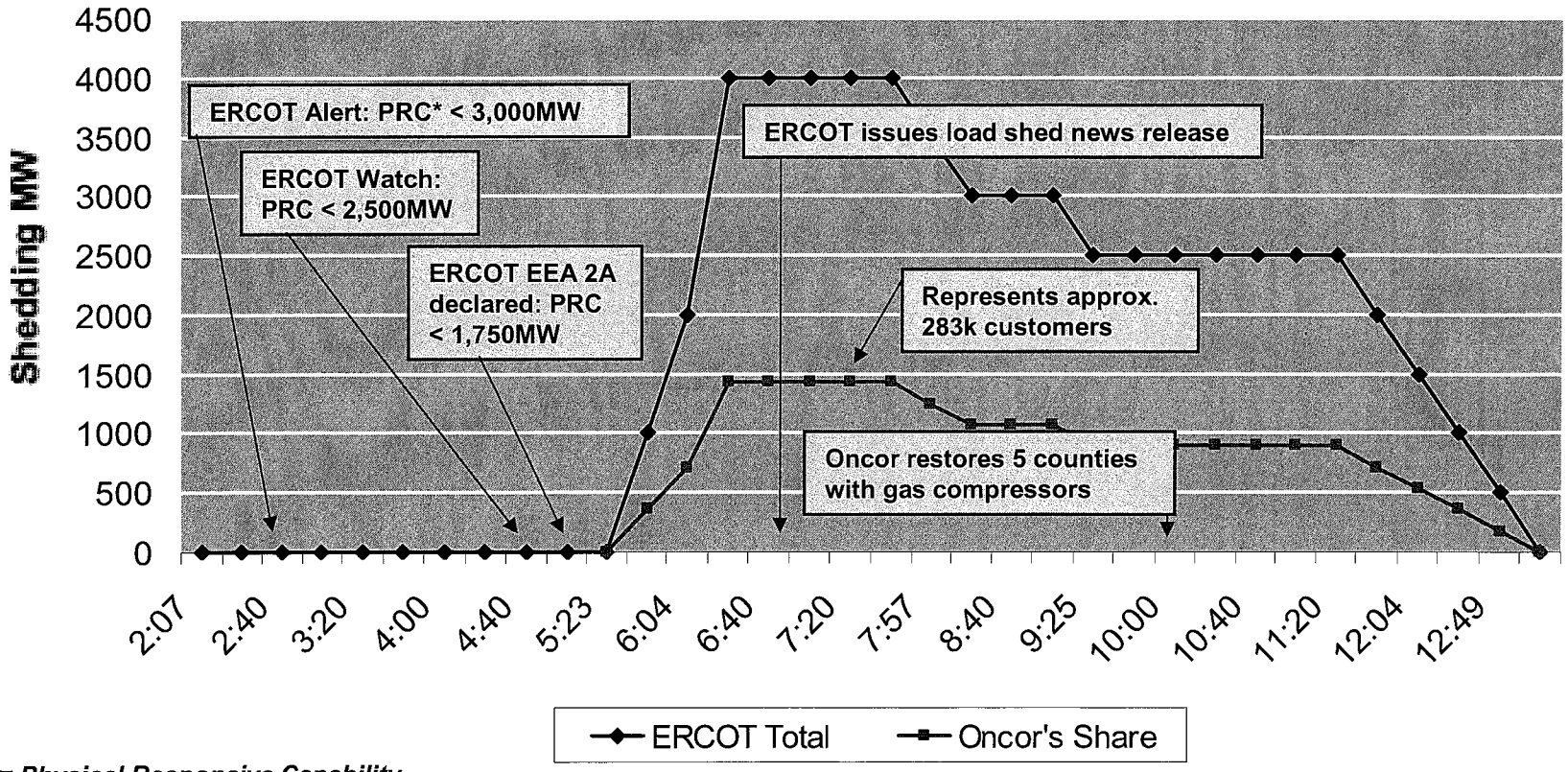
The last time ERCOT directed utilities to initiate a load shedding event was in the Spring of 2006; however, it only included 1,000 MW, one-fourth the amount directed by ERCOT in February 2011.

The last winter load shedding event occurred in 1989.

Oncor follows its plan when directed to manually shed load, which ensures that critical loads are the last affected.

Emergency Load Shedding – February 2nd Timeline





** PRC = Physical Responsive Capability*

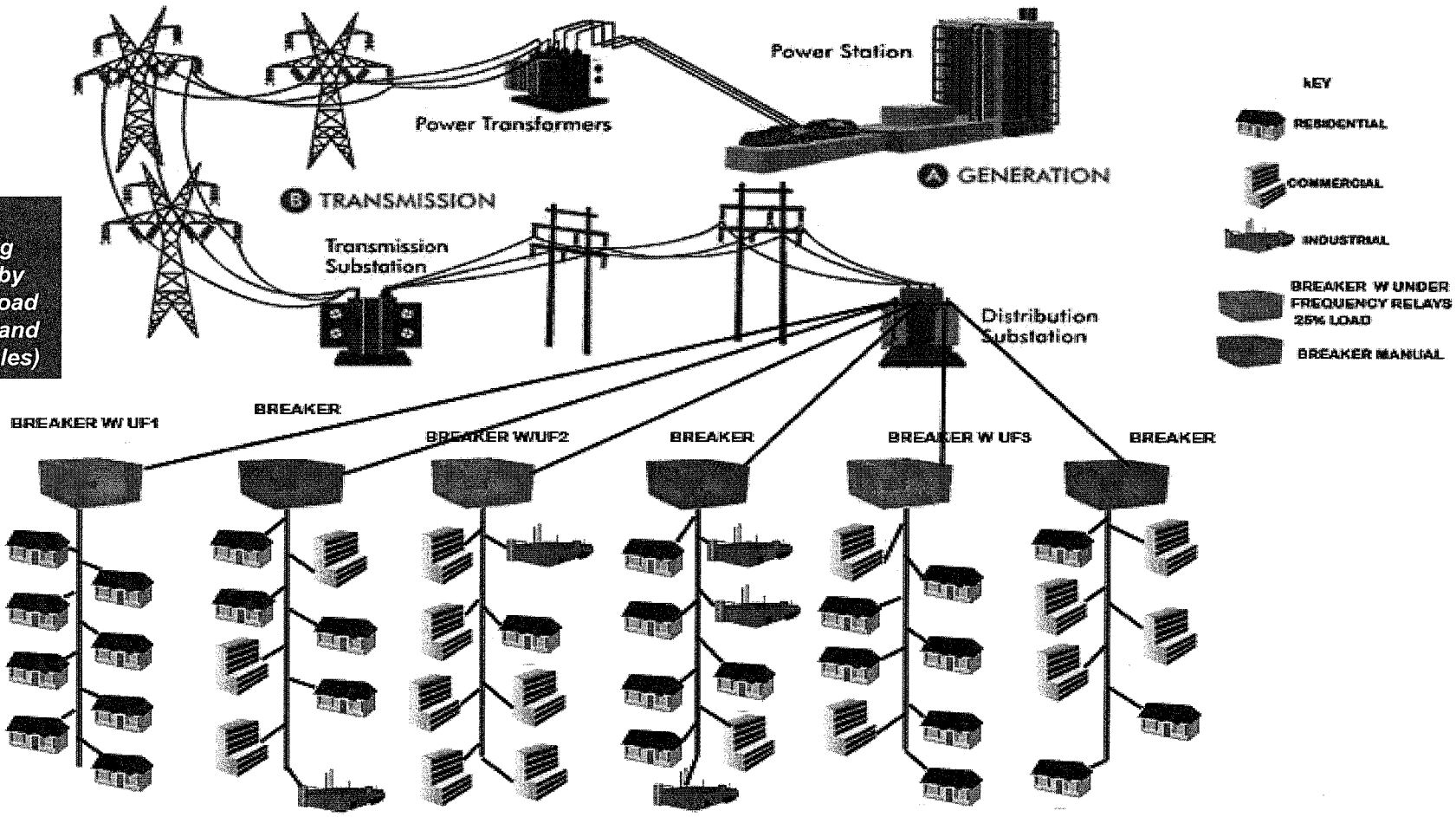
Oncor experienced no transmission-related outages during the load shedding event.

Emergency Load Shedding – How it Works

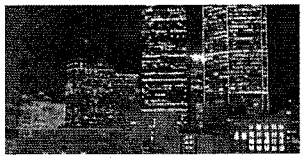



ONCOR

Load shedding directed by ERCOT (Load Resource and interruptibles)



Emergency Event – Synopsis




- The ERCOT emergency on February 2 was unprecedented.
- Oncor prepares its workforce to address emergency situations through planning, numerous drills and simulations.
- Oncor followed ERCOT's instructions in the execution of the Plan including the implementation of controlled, rotating load shedding.
- Oncor successfully implemented its plans to address the ERCOT emergency and prevented the situation from becoming more serious.
- Post event assessments include the following recommendations:
  - Explore communication alternatives for critical loads, cities, and others.
  - Study winter load shed priorities pertaining to gas infrastructure.