Implementation of FY2022 Comprehensive Disaster Drill

September 9, 2022

Osaka Gas Co., Ltd.

Osaka Gas Co., Ltd. (President: Masataka Fujiwara, hereinafter referred to as "Osaka Gas") today conducted a comprehensive disaster prevention drill assuming a magnitude 8.7 earthquake with an epicenter in the Nankai Trough. By conducting an earthquake drill and a BCP*1 drill as well, the company verified issues regarding business continuity in parallel
with disaster response operations in order to strengthen its comprehensive disaster response capabilities.

In the earthquake drill, based on the assumption that a Nankai Trough earthquake with a maximum seismic intensity of 6-plus had occurred in the Kansai region, the company set up a countermeasures headquarters with the president as the director and conducted a practical training exercise with the aim of improving initial disaster response capabilities as well as sharing the disaster response flow until complete recovery. About 2,000 employees of the Daigas Group, including those of partner companies, as well as 50 staff members from 13 retailers other than Osaka Gas, participated in this drill and confirmed cooperation in disaster response.

In addition, during today's drill, the company considered disaster prevention measures in the event that the Japan Meteorological Agency announces the "Nankai Trough Earthquake Extra Information" *2 when abnormal phenomena are observed along the Nankai Trough, and it discussed the details of the measures in each organization.

In order to further improve disaster response capabilities, each organization of the company will continue to address the issues found in this drill

The Daigas Group will continue to enhance its countermeasures against and preparation for earthquakes and other disasters to ensure a safe and stable supply of city gas.

[Outline of comprehensive disaster drill]

Assumed earthquake	Epicenter: Nankai Trough
	Scale: Magnitude 8.7
	Seismic intensity: Maximum seismic intensity 6-plus
	Time of occurrence: 13:15 on a weekday
Number of participants	Approximately 2,000 people (Employees/staff members of the Daigas Group, partner companies, retailers, etc.)

Content	<Earthquake drill> - Confirmation of the response following the announcement of Nankai Trough Earthquake Extra Information - Confirmation and verification of disaster response in cooperation with retailers - Sharing of the “initial response” flow and major decision-making process about 24 hours after the earthquake during the COVID-19 pandemic <BCP drill> - Confirmation of procedure for activating the BCP

*1 Business continuity plan: An action plan formulated in advance so that in the event of a problem, a minimum number of business activities can be continued or resumed within a target recovery time with limited management resources

*2 "Nankai Trough Earthquake Extra Information" is intended to notify the increased possibility of an earthquake occurring in the entire Nankai Trough area and is issued by the Japan Meteorological Agency when abnormal phenomena, such as large-scale earthquakes and crustal movement, are observed in the assumed epicenter area. It was introduced in May 2019.

<Scene of the FY2022 comprehensive disaster drill>

(Reference) Concept and progress of Daigas Group's earthquake disaster prevention measures

In response to the Great East Japan Earthquake, the Daigas Group has reformed its conventional earthquake disaster prevention measures in line with reviews conducted by the national government and other administrative organizations.

(1) Preventive measures (promotion of the use of earthquake-resistant equipment)

To minimize damage in the event of an earthquake, the quake resistance of gas facilities and safety measures at customer sites are being enhanced.

- Introduction of highly earthquake-resistant gas pipes, such as polyethylene pipes
- Adoption of pile foundations with a structure that is resistant to liquefaction and ground deformation into the foundations of the main manufacturing facilities

(2) Emergency measures (measures to prevent secondary disasters)

Gas shut-off systems are being introduced to prevent secondary disasters due to gas leaks in the event of an earthquake or other disaster.

- Establishment of information gathering systems (governor monitoring, seismographs, etc.)
- Establishment of gas shut-off systems (division of conduit networks, seismic shut-off/remote shut-off systems)
- Establishment and enhancement of wireless communication networks
- Development of an earthquake disaster prevention system (damage prediction, recovery simulation)

(3) Recovery measures (measures to ensure early restoration of gas supply)

To enable quick restoration of gas supply to blocks where it has been suspended, various measures are taken, both tangible and intangible.

- Preparation of materials and equipment for restoration work
- Development of organizational systems and earthquake response manuals
- Emergency supply to facilities with high public importance or social urgency that could affect human life
- Introduction of systems that contribute to disaster recovery
- Introduction of systems that visualize the progress of recovery

(4) Tsunami countermeasures (measures to prevent secondary disasters that could be caused by a tsunami)

To achieve early recovery while preventing secondary disasters that could be caused by a tsunami, various measures are taken, both tangible and intangible.

- Introduction of a tsunami disaster prevention system

- Development of a system to stop gas supply to areas inundated by a tsunami
- Implementation of tsunami countermeasures (making doors watertight, raising the height of facilities) for important buildings where devices such as control systems are deployed

<Progress of major earthquake countermeasures since the Great Hanshin Earthquake>

Item	Major earthquake countermeasures	At the time of the Great Hanshin Earthquake (January 1995)	Current status (April 2022)
Enhancement of information-gathering capabilities	Expansion of seismographs	Installed at 34 locations	- Installed at about 3,300 locations
	Introduction of an earthquake damage prediction system	————	- Introduced in the Central Control Room of the Supply Headquarters (Head office and Sub-center) and five districts
Development of gas shut-off systems	Subdivision of supply block	55 middle blocks	- 87 middle blocks - 709 little blocks
	Introduction of gas shut-off devices	Remote shut-off only available for super block units (The whole service area is divided into eight super blocks.)	- About 3,600 remote shut-off devices - About 3,000 automatic seismic shutoff devices
Enhancement of emergency communication	Enhancement of wireless communication systems	————	- Establishment of two Central Control Rooms: Head office and Sub-center - Six portable satellite communication devices
Other countermeasures	Seismic resistance rate	Seismic resistant pipes as a percentage of all pipes in use: 68%	- Seismic resistant pipes as a percentage of all pipes in use: About 89%
	Promotion of the use of PE pipes	Total length of PE pipes in use: About 1,200 km	- In principle, all newly installed low-pressure pipes are PE pipes. - Total length of PE pipes in use: About 17,600 km
	Backup system for important online systems	————	- Establishment of a backup center