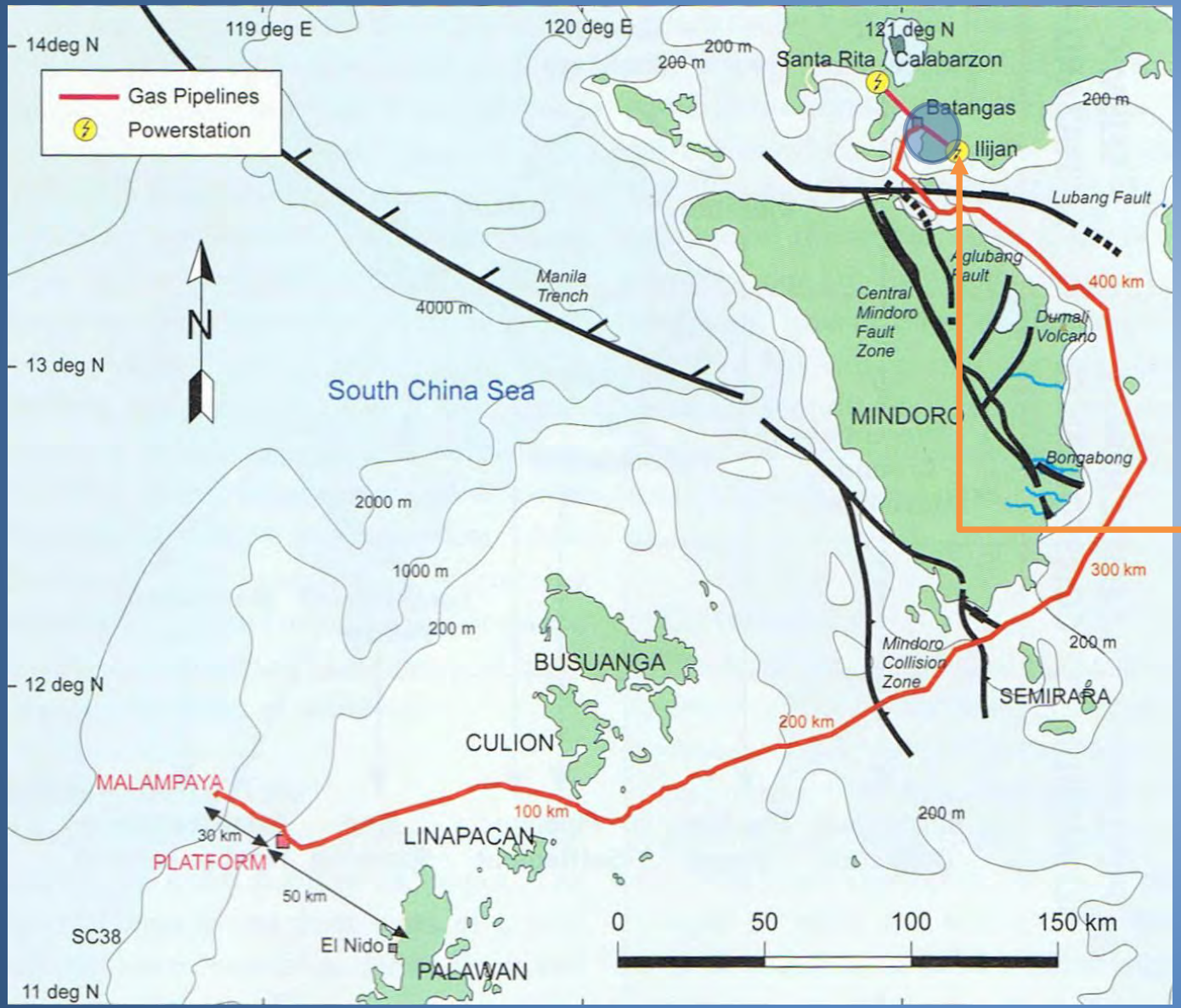
ILIJAN NATURAL GAS RECEIVING FACILITY (INGRF) and PIPELINE

OUTLINE

- Introduction / Background of the INGRF
- Disaster Preparedness
- Emergency Incidents/Scenarios and Action Plans
- Consequences Arising from an Emergency or Incident
- Safety and Security Features and Maintenance Programs

INTRODUCTION:



Three combined-cycle gas turbine plants:

1,000-megawatt Sta. Rita power station, the

500-megawatt San Lorenzo power station

1,200-megawatt Ilijan power station

Total: 2,700 megawatts of power for Luzon

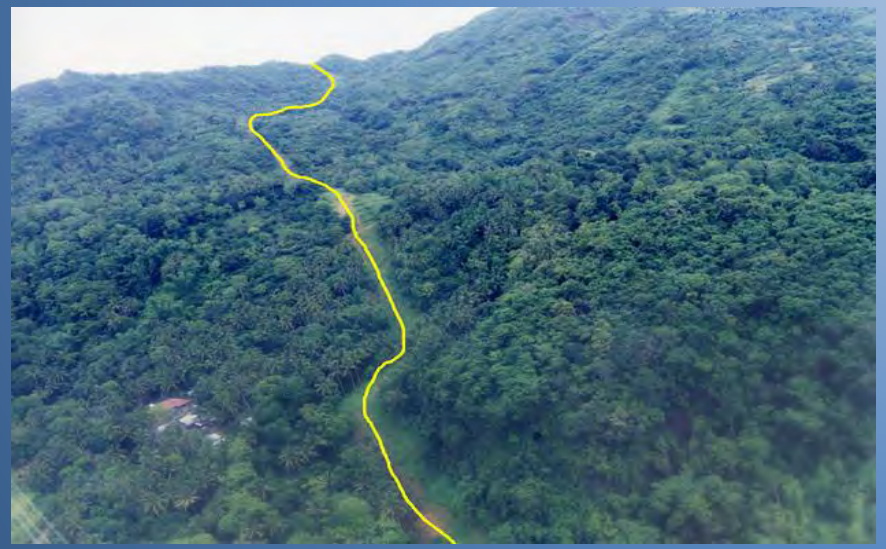
LOCATION:


CUTA
Philipinas Shell Petroleum Corporation
Batangas Bay
Western Nautical Hwy
Batangas - Sabang
Batangas - Sabang
43 min
20.2 km
Montemaria Batangas
Ilijan Power Plant
Measure distance
Click on the map to add to your path
Total distance: 11.03 km (6.85 mi)
Gov. Antonio Cardo Rd
Taysan - Lobo Rd
Lobo
Batangas - Tabangao - Lobo Rd
Butterfly Beach House
Map
3D
Imagery ©2018 Google, Data SIO, NOAA, U.S. Navy, NGA, GEBCO, Data LDEO-Columbia, NSF, NOAA, DigitalGlobe, DigitalGlobe, CNES / Airbus, TerraMetrics, Map data ©2018 Google
Philippines
Terms
Send feedback
2 km

ILIJAN NATURAL GAS PIPELINE ROUTE: 14.7km

From the 1200 mw Ilijan Combined Cycle Power Plant

Barangay Ilijan – KP 13.214 to KP 13.73



Barangay Haligue Silangan - KP 8.686 to KP 9.253

Malampaya Onshore Gas Plant, Tabangao, Batangas City

BARANGAYS TRAVERSED BY THE NATURAL GAS PIPELINE

- Barangay Ilijan, Batangas City
- Barangay Haligue Silangan, Batangas City
- Barangay Haligue Kanluran, Batangas City
- Barangay Sto. Niño, Batangas City
- Barangay Dao, Batangas City
- Barangay Tabangao, Batangas City

- The Ilijan Natural Gas Receiving Facility (INGRF) is located at Brgy. Ilijan, Batangas City and is accessible from Batangas City through 25 km of scenic coastal road. This facility was commissioned on October 31, 2001.

- The purpose of the INGRF and pipeline is to provide necessary transmission system to effect a safe, reliable and efficient delivery of natural gas fuel for the 1200 MW Ilijan Combined Cycle Power Plant which is managed and operated by KEPCO Ilijan Corp. (KEILCO). The plant started its commercial operation on June 5, 2002.

Gas Pipeline Description:

The gas piping system is composed of :

- approximately 14.7 km. of 16 in. dia. onshore steel pipeline from its take-off point at Malampaya On-Shore Gas Plant located at Tabangao, Batangas City;
- three (3) major isolating valves;
- Pig Launcher and Receiver Stations;
- Dust Filters;
- Gas heaters; and
- Pressure Reduction Skid.

The whole pipeline system is adequately coated internally and externally and is provided with a cathodic protection system to resist corrosion.

Ilijan Natural Gas Receiving Facility :

- Is where the Administration, Maintenance / Workshop and Storage building is located together with the Pig receiver, Dust filter, Gas heater and Pressure Reduction skid.
- The main control room of the whole facility is located at the administration building and is run by Supervisory Control And Data Acquisition (SCADA) and Pipeline Integrity Management System(PIMS).

DISASTER PREPAREDNESS

EMERGENCY RESPONSE PLAN

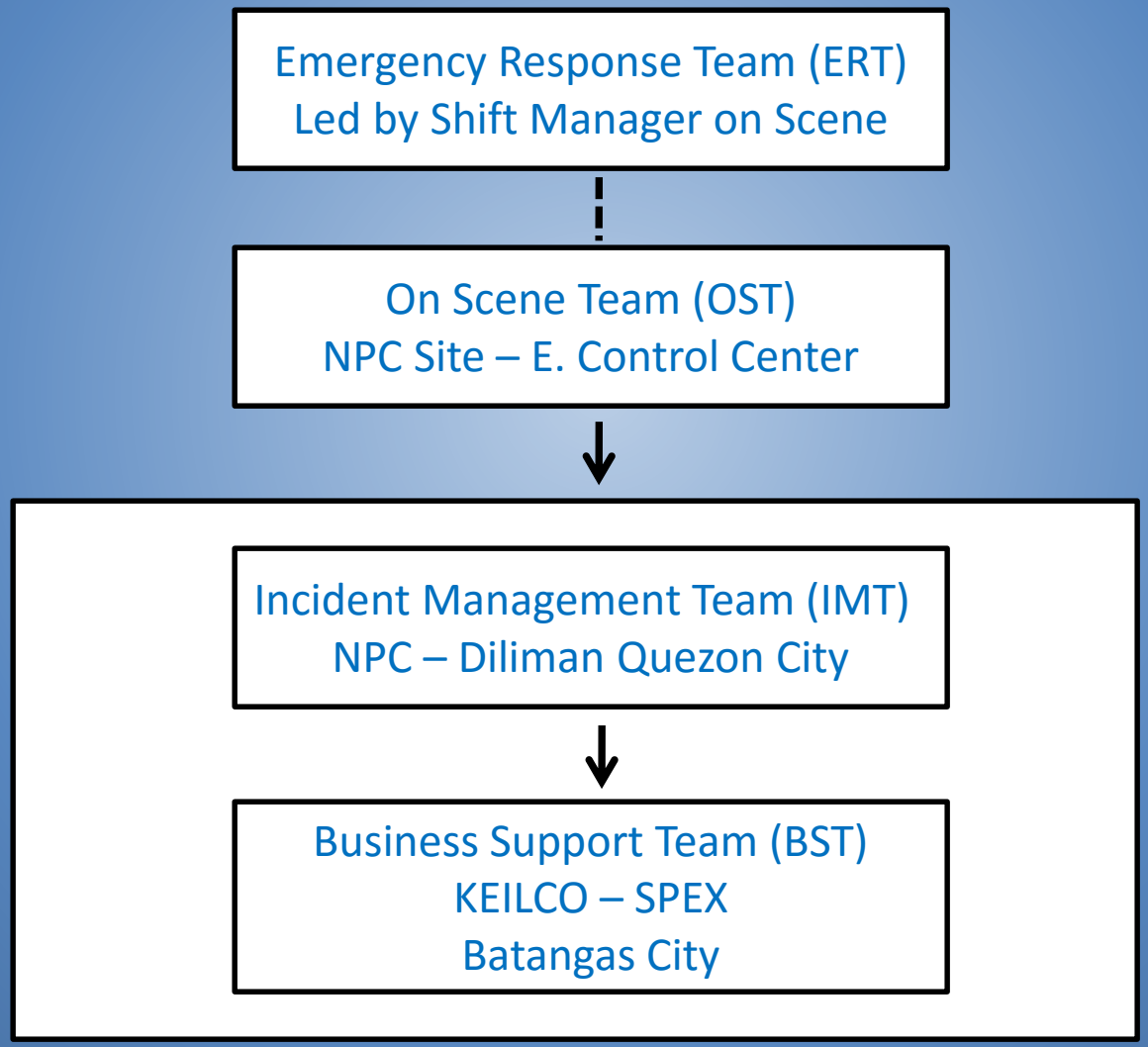
Objective:

- The objective of the Emergency Response Plan is to protect people, property and environment by establishing a framework of emergency preparedness, planning and response capabilities.

- In view of the above objective, a procedure is written to provide a comprehensive guide for the handling of emergencies/disasters of the NPC Ilijan Gas Pipeline Facility.

The principal concept is that a nominated **EMERGENCY RESPONSE TEAM (ERT)** led by the shift Superintendent as **Emergency Controller (EC)** will deal with all emergencies and backed up by the NPC Duty Manager. If an emergency occurs that necessitates activation of the Corporate Contingency Plan, this Team will be the **On Scene Team (OST)**. The OST will report and liaise with **Incident Management Team (IMT)** located in Quezon City. The IMT will be supported by **Business Support Team (BST)** located at the Ilijan Power plant, Ilijan Batangas

Organizational Chart



National Power Corporation
Ilijan Natural Gas Receiving Facility
Barangay Ilijan, Batangas City

EMERGENCY RESPONSE TEAM

INCIDENT COMMANDER
Division Manager, IPPCM-INGRF
1. Organize & direct employees in the event of emergency.
2. Direct all activities within emergency zone in accordance with priorities.
3. Indoctrinate, train & drill INGRF employees in Emergency response.
4. Coordinate with Corporate Safety Engineer any addition or revision of Emergency Response Plan.
5. Supervise INGRF personnel during emergency & fire drills.

Emergency Controller
Shift Supervisor, Operations
1. Assist the Scene Commander in all emergency activities.
2. Take over the duties of Scene Commander in the latter's absence.
3. Receive and transmit messages, orders & informations during the period of emergency.
4. Organize, train & supervise the traffic and communication personnel.
5. Notify the Fire Marshall and the Fire Department of any incidence of fire and other emergencies.

SECURITY TEAM
Security Guards
1. Report to the Scene Commander and implement instructions.
2. Secure the emergency zone to control irregularities.
3. Prevent people not directly involved to get near the area.
4. Control traffic movement and personnel at emergency zone area.

FIRE FIGHTING TEAM
Principal Engineer A - Maintenance
Sr. Mechanic
Pipeline Inspectors, Janitors
1. Report to Scene Commander & implement instructions.
2. Direct action in the control and extinguishment of fire & during fire drill.
3. Periodic testing of fire fighting equipment/protection system.
4. Responsible for the availability and state of readiness of the team.
5. Provide a search and rescue capability.

MEDICAL TEAM
KEILCO Medical Team
1. Designate a site for the evacuation of injured persons.
2. Administer first-aid treatment to injured person.
3. Send the injured person to the nearest hospital if needed.

EMERGENCY COMMUNICATOR
Electrical Control Operator
1. Make sure emergency alarm is sounded.
2. Advise ERT members about the nature/location of emergency.
3. Receive and transmit messages, orders & information upon instruction by Scene Commander.

TRANSPORTATION TEAM
Drivers
1. Clear the street or passageway to give access during personnel evacuation.
2. Transfer/transport the evacuated personnel to safe area.
3. Clear the street or passageway of parked vehicles & other obstruction for the easy access of firefighting unit/ambulance/rescue unit.

RESCUE/ EVACUATION TEAM
Sr. Technician
Property Assistant
Janitors
1. Acquaint the evacuation route of the floor plan of the building/area the location of exits and stairways.
2. Guide the evacuees to achieve an orderly and safe evacuation process.
3. Ensure the safe and effective use of all available exit facilities during the fires and fire drill.
4. Prevent panic, confusion, injury & loss of life during the period of emergency.
5. Evacuate the building/area of its content using the order of priorities upon instruction by team leader.

NATIONAL POWER CORPORATION
ILIJAN NATURAL GAS RECEIVING FACILITY
EMERGENCY RESPONSE PLAN

Purpose:

- This procedure is written to provide a comprehensive guide for the handling of emergencies/disasters of the NPC Ilijan Gas Pipeline Facility.

- This will likewise ensure that an emergency link between the three (3) major teams is established to manage emergency or incident involving company personnel, environment, plant or property and business interest.

- In case of emergency when fire water is to be used, the KEILCO Plant Management should be alerted immediately. The objective of earlier notification is to ensure a back up system (sea water pumps) are ready to be operated.

Scope:

- An emergency is defined as a major system failure which impacts, or threatens to impact, severely upon personnel, environment, property and/or business profit. It is an event, the outcome of which could adversely affect NPC's license to operate, market share, reputation, image or profitability.

EMERGENCY INCIDENTS/SCENARIOS AND ACTION PLANS

1. Gas Leak On Pipeline Route

Action Plans:

- If gas leak on the pipeline route is reported, the Shift Superintendent / (Emergency Controller) will call the Pipeline Guard nearest the area for leak confirmation.

- If leak is confirmed, the ERT team will be ordered to depart to the affected site while KEILCO Plant Management and SPEX will be informed.

- SPEX will initiate closure of the ESDV using SCADA while KEILCO is to continue gas intake to depressurize and deplete remaining gas in the pipeline.

- ERT team will inform and warn nearby residents within the 100 meters radius from the leak, barricade the area and eliminate all ignition sources.

- Initiate immediate repair of the pipeline after the pipeline has been completely depressurized.

2. Cyclone / Typhoon

Philippine Public Storm Warning Signals (PSWS) issued by Philippine Weather Bureau (PAG-ASA) lists four levels of signals:

PSWS #1

- A tropical cyclone will affect the locality. Winds of 30-60 km/hr may be expected within 36 hours, or intermittent rains may be expected within 36 hours. When the tropical cyclone develops very close to the locality, a shorter lead time for the occurrence of the winds will be specified on the bulletin.

Cyclone / Typhoon …*continued*

PSWS #2

- A tropical cyclone will affect the locality. Winds of 60-100 km/hr may be expected within 24 hours.

PSWS #3

- A tropical cyclone will affect the locality. Winds of 100-185km/hr may be expected within 18 hours.

PSWS #4

- A very intense typhoon will affect the locality. Very strong winds of more than 185 km/hr may be expected within 12 hours.

Action Plan (Typhoon)

PSWS #1

- Check the area for loose equipment, materials, scaffolding temporary sheds and advise parties concerned/contractors to be ready to remove or secure them when signal No.2 is raised.

- Remind operators that signal No.1 is set and remind them of their duties and responsibilities the moment signals No.2 and No.3 are raised.

- Advise first aid staff to be alert for emergency medical care when the need arises.

Action Plan (Typhoon) …*continued*

PSWS #2

- Ensure that the checklist under signal No.1 has been filled-up.
- Secure all doors of all buildings.
- Advise all operators and personnel that signal No.2 is up.
- Attend typhoon meeting upon advise.

PSWS #3

- In case of total shutdown, investigate the cause of shutdown.
- Assess damage and perform necessary repairs
- Do not restart without notification from Site Manager.
- Start up as per normal start-up procedure.

3. Earthquake

General Guidelines and Facts to Remember

A. An earthquake starts with the so-called “initial shock” which may last for a few seconds to almost a minute or so. After the initial shock, “aftershocks” normally ensues. The intervals that separate the initial shocks from the aftershocks are not regular. Aftershocks may occur in rapid succession immediately after the initial shock and the interval may vary from seconds, minutes, hours, or maybe days. It may keep on repeating for weeks or months.

Earthquake … *continued*

B. Earthquakes also occur suddenly catching people by surprise and often cause momentary confusion. Management team members, therefore, should try to take control of the situation immediately and instruct everyone within hearing distance to:

1. Stay calm.

2. Take cover under the nearest table or desk is available, otherwise stand around a post or close to the strongest structure in the building/floor. (Duck – Cover – Hold)

Earthquake … *continued*

3. Keep away from:
   i. glass windows which could shatter;
   ii. from freestanding furniture or appliance which could topple; and
   iii. from overhead fixtures which could drop.

4. Stay inside the building considering the usually short duration of an earthquake.

5. Running outside may subject them to falling debris.

Earthquake … *continued*

C. After the initial shock;

1. Order for COMPLETE EVACUATION of building through the guards or by radios.

2. Inspect buildings, structures, and other equipment for any damage.

3. Institute necessary precautions for areas with potential hazards. Alert relevant response teams to cope with developing dangers.

4. Perform necessary repairs after thorough assessment and consultation with relevant higher authorities/services.

Earthquake … *continued*

5. Ascertain safety of work areas.

6. Report extent of damage, needs and current situation.

7. Initiate Fire Alarm.

8. Evacuate site.

9. Muster necessary personnel in Control Room.

10. Initiate emergency shutdown using ESDV.

11. Complete Control Room Operations (CRO) / Incident Commander (IC) checklist.

12. Assess situation, damage, and status of plant.

When considered safe, send out a team with gas testers and SCBA for damage assessment along the pipeline.

4. Erosion

Action Plan:

- Report effects of gradual erosion observed during regular patrol.
- After an earthquake or typhoon, pipeline patrol is to check any substantial erosion that would compromise the pipeline.
- If substantial erosion is observed, isolate the area and determine possible leak using gas detectors.
- If leak is confirmed, observe action plans for gas leak.
- Evaluate erosion incident and address further possible erosion. Recommend necessary measures to management

5. Bomb Threats

In case of a bomb threat call, the recipient should act as follows:

1. Note information and particulars (code words, male/female, accent, background noises, etc.).
2. Initiate coded alarm signal.
3. Search Control Room for suspected objects.
4. Muster all site personnel, if considered safe, in the Control Room.
5. Notify Shift Superintendent.
6. Instruct Security Guard that no entry or exit is allowed.
7. Do not use Mobile Phones.
8. Do not use radios.
9. Consider shutting down the plant if threat is considered credible including blowdown.
10. If bomb goes off, stay in Control Room. Initiate ESD and consider blowdown.

6. Suspected Packages

The recipient of a suspected package should place the package gently on the nearest horizontal surface (DO NOT PLACE IT IN WATER OR COVER WITH SAND), and do the following;

1. Shut-off / Isolate the immediate area.
2. Contact Security and try to determine source of package, if possible.
3. Inform the Shift Superintendent.
4. Report the matter to competent authority.

7. Intruders

On detection of an intruder to the plant, do the following:

1. Alert the police.
2. Be observant, but avoid contact with intruders.
3. Recall shift team into Control Room and Security staff to gatehouse.
4. Lock the Control Room Doors.
5. Monitor intruders. Update the Police.
6. Inform the Shift Superintendent.

NOTE:

In case of a security incident (Bomb Threat, Intruder) any press statement should be coordinated with IMT.

8. Fire (in the Receiving Facility)

- Fire Alarm inside the building will be sounded
- Evacuate all personnel from the buildings to the Assembly Area located at the carpark outside the NGRF adjacent to gurad house
- Ensure the Emergency Communicator at Control Building is alerted about the location and nature of emergency
- Attempt to extinguish the fire
- Post someone at the building door to guide the ERT to the scene
- Carry out headcount and report to the Emergency Communicator
- Initiate necessary action if there are persons missing from headcount

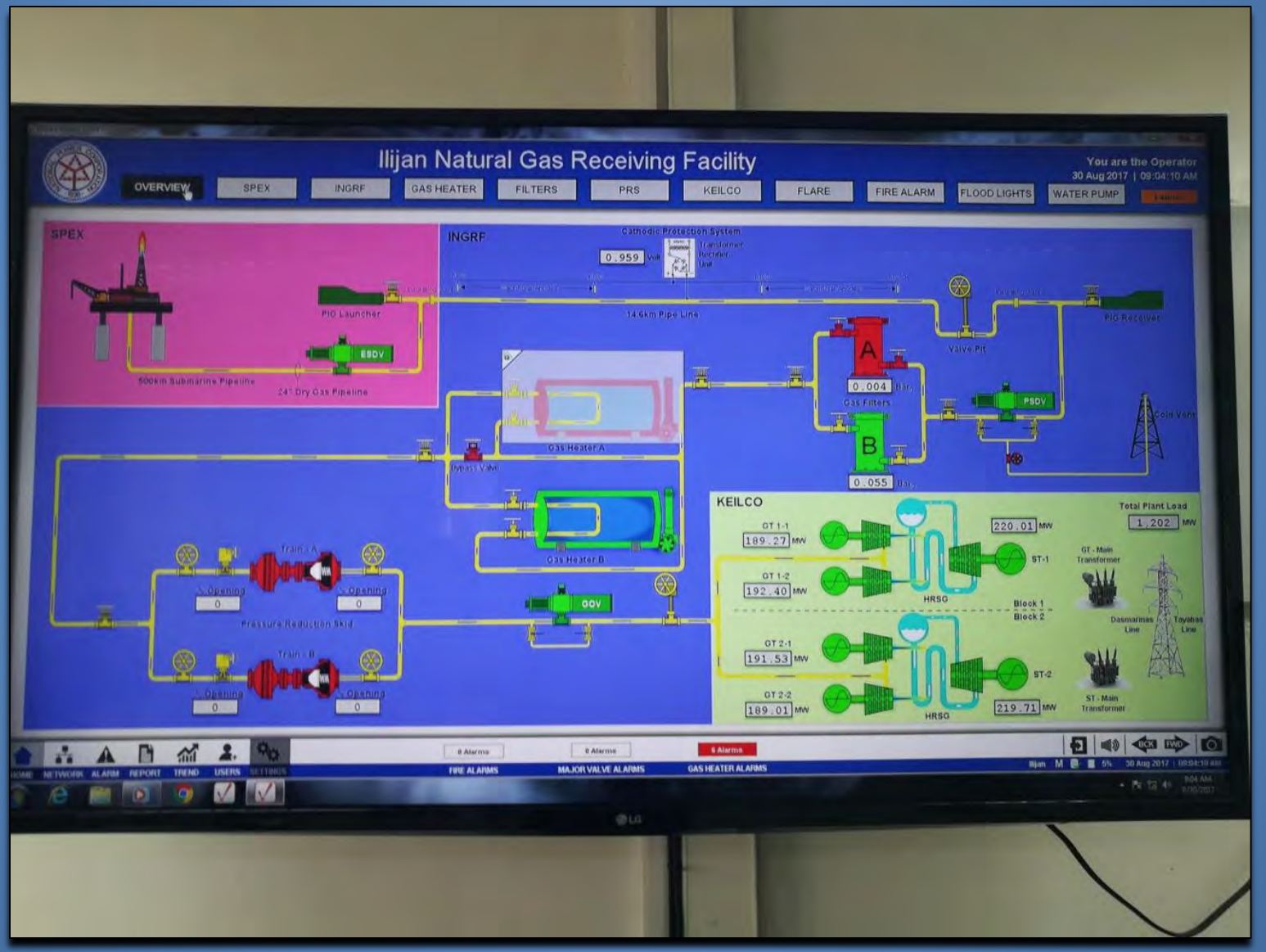
CONSEQUENCES ARISING FROM AN EMERGENCY OR INCIDENT

- Fatality, injuries or serious health effect.
- Large emission, fire explosion or gas leaks.
- Significant environmental or community property damage.
- Substantial adverse media coverage (national/international).
- Extensive public outrage.
- Serious company financial impact.
- Significant liability, penalties or fines.
- Civil unrest, social unrest etc.
- Have the potential to affect the license to operate.
- Significant impact due to loss of utilities (power, gas, etc.).

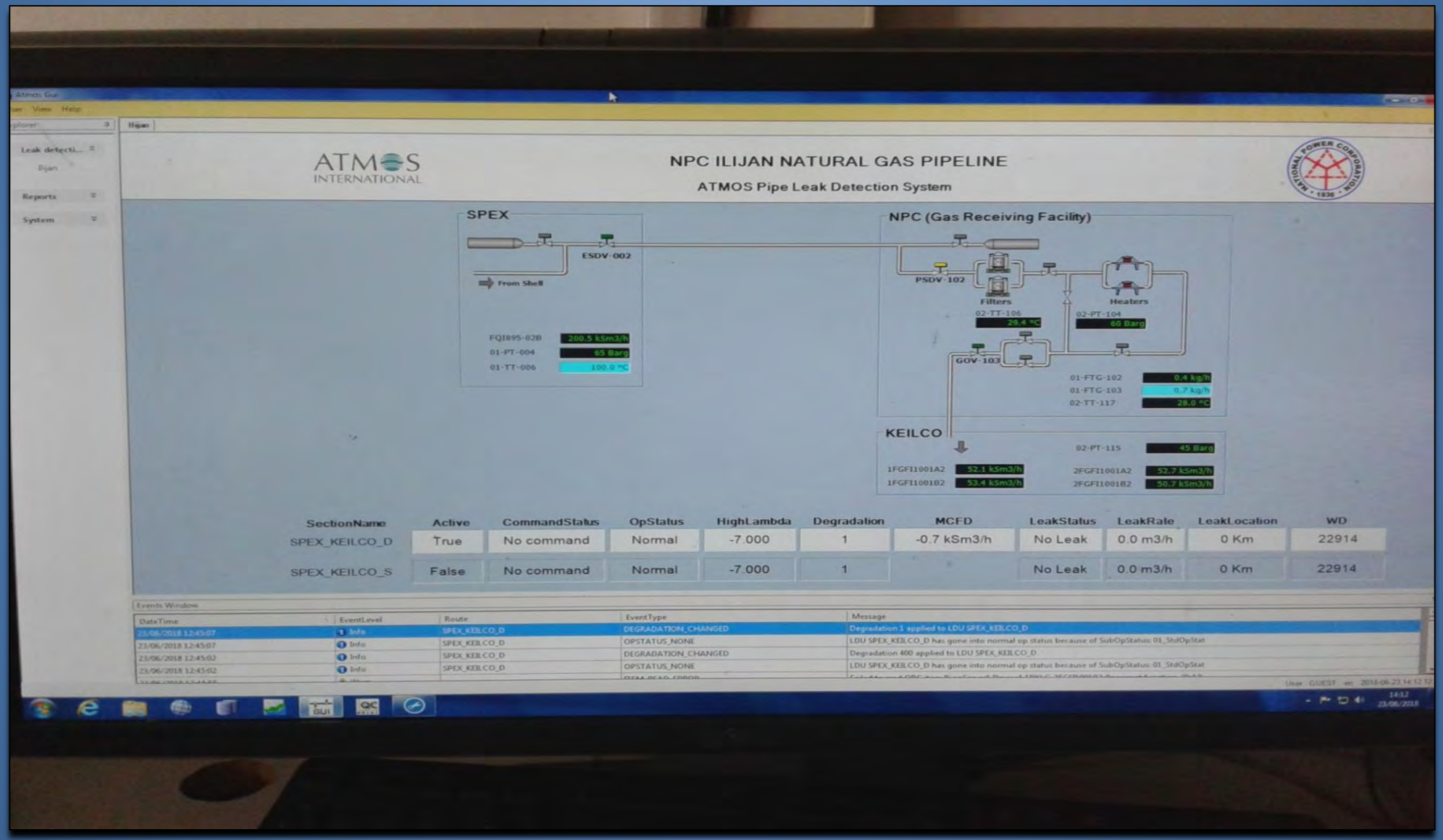
SAFETY AND SECURITY FEATURES AND MAINTENANCE PROGRAMS

1. 24/7 MONITORING OF PIPELINE AND GAS RECEIVING FACILITY OPERATION

2. SCADA-(Supervisory Control and Data Acquisition)



3. LDS- (LEAK DETECTION SYSTEM)



4. CATHODIC PROTECTION SYSTEM

5. REGULAR PIPELINE PATROLLING

6. INFORMATION, EDUCATION AND COMMUNICATION (IEC) CAMPAIGN

7. TRAININGS AND SEMINARS

8. SCHEDULED MAINTENANCE PROGRAM

A. PIPELINE PIGGING

B. OVERHAULING OF MAJOR VALVES

C. REPLACEMENT DEFECTIVE VALVES

D. PERIODIC CALIBRATION OF INSTRUMENTS

E. REGULAR CONDUCT OF LEAK TESTING

ILIJAN NATURAL GAS RECEIVING FACILITY OPERATION AND MAINTENANCE PERSONNEL

Ilijan Natural Gas Receiving Facility Operation and Maintenance personnel headed by Mr. Jonas Q. Evangelista, Division Manager.

INGRF RECORD:

ZERO FORCED OUTAGE SINCE 2010

Thank you for your attention.

http://www/napocor.gov.ph