NATURAL GAS TRANSMISSION UTILITY (TECHNICAL AND OPERATIONAL) RULES, 2007

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SCHEDULE

NATURAL GAS TRANSMISSION UTILITY (TECHNICAL AND OPERATIONAL) RULES, 2007

IN exercise of the powers conferred on the Energy Commission by section 28 of the Energy Commission Act 1997, (Act 541) these Rules are made this 5th day of December, 2007.

Operations

Scope

1. These Rules set out the working principles which govern

(a) the natural gas transmission utility's relations with a shipper, wholesale supplier, bulk customer or distribution company; and

(b) the day to day operation and maintenance of the transmission system.

Framework Agreement

2. (1) A person who intends to engage in commercial operations in the natural gas industry shall enter into a framework agreement with the utility.

(2) A framework agreement shall bind the parties in respect of the following

(a) the procedure to obtain and terminate transmission and interconnection services for natural gas;

(b) the method of response to request for the utility's services; and

(c) maps and diagrams of the utility's facilities in the country as required under section 24 (2) (c) of the Act.

(3) The framework agreement shall be lodged with the Commission before the commencement of any commercial operations.

Operating responsibilities

3. The utility shall

(a) install and operate a national natural gas transmission pipeline system that transports natural gas to natural gas distribution companies, storage facilities and bulk customers;

(b) ensure the safe and reliable operation of the natural gas transmission system;

(c) transport natural gas for a fee to local distribution companies licensed by the Energy Commission and bulk customers without discrimination; and

(d) pay tariffs approved by the Public Utilities Regulatory Commission, in accordance with section 24(1)*(b)* of the Act.

Procedures for operations

4. (1) The utility shall

(a) prepare a manual of procedures to conduct operations, maintenance activities and for emergency response;

(b) operate and maintain its facilities in conformity with the manual; and

(c) keep records required to administer its operations properly.

(2) The manual shall be prepared before commercial operations of the utility commence.

(3) The manual may be modified on the recommendation of the Commission or as experience and changes in operating conditions demand.

(4) The manual and modifications made to it shall be submitted by the utility to the Commission for approval.

(5) The manual is a public document.

Contents of operational manual

5. (1) The manual prepared in accordance with rule 4*(a)* shall accord with internationally accepted standards which include

(a) information on operating and maintenance activities of the natural gas transmission pipeline system;

(b) detailed plans and instructions for employees on the operation and maintenance procedures for natural gas facilities during normal operations and repairs;

(c) plans to give particular attention to those portions of the facilities that present the greatest risk to the public in the event of an emergency or because of construction or extraordinary maintenance requirements;

(d) provision for periodic inspections along the route of existing pipelines or mains and the utility's facilities; and

(e) procedures for continuing surveillance of the checking and addressing variations from normal operations.

(2) The manual shall be reviewed and updated by the utility at least once each calendar year.

(3) Appropriate parts of the manual shall be kept at locations where operations and maintenance activities are conducted.

Measuring equipment

6. (1) A shipper, wholesale supplier, bulk customer or distribution company shall provide a suitable location for the installation of, and easy access to the utility's measuring equipment.

(2) The utility shall perform the obligations provided by law with respect to measuring equipment.

Non-compliant gas

7. (1) Where non-compliant gas is delivered by a shipper to the transmission system, the shipper shall indemnify the utility for costs and expenses properly incurred by the utility from the delivery of the non-compliant gas, including expenses incurred to

(a) clean the whole or a part of the transmission system or rectify damage caused to it;

(b) ensure that the transmission system continues to operate in accordance with these Rules despite the delivery or continued delivery of the non-compliant gas; and

(c) bring the natural gas within the entry specifications.

(2) The quantity, quality and delivery characteristics of natural gas delivered to the transmission system at an entry point and the compliance or non-compliance with the specifications in the Schedule shall be determined by the utility.

(3) The utility shall prevent the entry of non-compliant gas to the transmission system at the entry point if any of the components of the non-compliant gas is of a destructive character.

(4) Where non-compliant gas is supplied to the transmission system by more than one shipper, the cost and expenses incurred in accordance with sub-rule (1), shall be recovered from each shipper responsible for the non-compliant gas proportionate to the respective final entry allocation at the entry of the shipper.

(5) Where the utility fails to comply with subrule (3), the Commission may impose a pecuniary penalty not exceeding one thousand penalty units.

Off-spec gas

8. (1) The utility is liable to pay to each bulk customer or distribution company an amount determined in accordance with subrule (3) where off spec gas has been off-taken from the transmission system at an off-take point.

(2) Subrule (1) does not apply if the utility has notified the bulk customer or distribution company that the natural gas available for supply is off spec and the bulk customer or distribution company has accepted to receive the off spec natural gas.

(3) The liability of the utility to a bulk customer or distribution company under subrule (1) shall be the expense reasonably incurred by the bulk customer or distribution company in taking the measures required to ensure that the off-spec gas is made fit for use in a final consumer's facility.

(4) The utility is not liable for any damage or loss caused to property belonging to or used by the bulk customer or distribution company as a result of an off-take of off-spec gas from the transmission system and the bulk customer shall indemnify the utility with respect to a claim by a final consumer against the utility in connection with damage or loss to the final consumer's property.

(5) Where a bulk customer or distribution company incurs an expense under this rule, the bulk customer or distribution company shall as soon as is reasonably practicable, notify the utility specifying

(a) the relevant off-take point and the day or days on which off-spec gas was off taken by the bulk customer or distribution company from the transmission system;

(b) the total quantity of off-spec gas off-taken by the bulk customer or distribution company at the off-take point and reasonable details of the aspects in which the off-spec gas did not comply with the off-take specification mentioned in the Schedule;

(c) reasonable details of measures taken to make the off-spec gas fit for use in a final consumer's facility and the expense incurred with regard to those measures; and

(d) the bulk customer's or distribution company's off-take proportion of the off-spec gas from a multiple off- take point.

(6) Failure to comply with the pressure conditions required of Regulations and Rules in respect of the standard of performance of the utility shall not render natural gas as being off-spec gas for the purpose of these Rules and the utility is not liable as a result of it.

(7) The compliance of natural gas off-taken shall be determined by the utility's measuring equipment.

Operational planning

9. (1) The utility shall prepare a quarterly and an annual operational plan based on information submitted to it by any shipper it deals with.

(2) The information shall include the quantity, quality, delivery characteristics and schedule of delivery of the natural gas to the shipper.

(3) The operational plan shall be made available to the shipper and the Commission.

Congestion management

10. (1) The utility may declare a difficult day or a restricted capacity day and instruct the affected shipper, bulk customer or distribution company by issuing an operational flow order.

(2) A shipper, registered at an entry point or a bulk customer or distribution company registered at an off-take point shall, comply with an operational flow order as soon as reasonably practicable and within

(a) six hours if the operational flow order is issued on Day D-1;

(b) three hours if the operational flow order is issued after 18:00 hours on Day D- 1; and

(c) one hour if the operational flow order is issued on Day D.

Difficult day and restricted capacity day

11. (1) The utility may issue an operational flow order before or during a difficult day and on a restricted capacity day.

(2) An operational flow order issued by the utility on a difficult day, may require a registered bulk customer or distribution company to off-take from a bulk customer's off-take point, its nominated quantity or renominated quantity at a uniform rate but without limiting the bulk customer or distribution company's right to make a renomination in accordance with the bulk customer or distribution company's agreement.

Back-up entry capacity on a restricted capacity day

12. (1) A shipper shall not utilise back-up capacity reserved at the affected entry point, if the utility issues an operational flow order declaring a restricted capacity day in respect of that entry point.

(2) A shipper holding primary capacity at an entry point affected by an operational flow order shall be permitted to activate a back-up capacity reserved at an entry point not affected by an operational flow order.

Suspension and termination

Suspension

13. (1) The utility may issue a suspension notice to a shipper, bulk customer or distribution company where the shipper, bulk customer or distribution company contravenes these Rules, is in breach of the framework agreement or any ancillary agreement.

(2) A suspension notice issued by the utility under sub-rule (1) shall specify the act or omission constituting the contravention or breach to which the suspension notice relates and may suggest the remedial action to be taken by the shipper, bulk customer or distribution company.

(3) The utility shall provide the Commission with a copy of the suspension notice before serving a shipper, bulk customer or distribution company with a suspension notice.

(4) The right of the utility to issue a suspension notice under this rule shall not limit any other right or remedy available to the utility under these Rules, the framework agreement and an ancillary agreement.

(5) The utility may suspend

(a) in whole or in part, the rights of the shipper, bulk customer or distribution company under these Rules, the framework agreement and an ancillary agreement;

(b) the right of the shipper, bulk customer or distribution company to tender natural gas for delivery to or off-take natural gas from, the transmission system at one or more entry or off-take points as specified in the suspension notice; and

(c) the right of the shipper to enter an entry point transfer or become the registered bulk customer or distribution company at an off-take point in accordance with the change of shipper, bulk customer or distribution company procedures and on condition that the suspension notice relates to the category of capacity in respect of which the contravention or breach has occurred by issuing a suspension notice and having regard to the circumstances of the contravention or breach to which the suspension notice relates.

(6) A shipper, bulk customer or distribution company may dispute the issue of a suspension notice by the utility under this rule.

(7) A suspension notice shall take effect from the time specified in the suspension notice unless otherwise directed by the Commission.

(8) A utility shall either limit the effect of the suspension notice or cancel the suspension notice by notice to the shipper, bulk customer or distribution company if the utility is of the opinion that the shipper, bulk customer or distribution company has taken or is taking appropriate action to remedy the contravention or breach and the utility considers the continuation of the suspension notice in its original form unnecessary in the circumstance.

(9) The suspension or cancellation notice shall have immediate effect upon the issuance of the suspension or cancellation notice.

General termination rights

14. (1) A party to a framework agreement may terminate the agreement on the default of the other party by giving a default notice to the defaulting party and where the default is not remedied within a time specified in the default notice, serve a termination notice on the defaulting party.

(2) The non-defaulting party shall provide the Commission with a copy of a default notice given to the defaulting party.

(3) The termination notice shall be given to a defaulting party after the non-defaulting party has given the Commission not less than three working days notice of its intention to serve a termination notice on the defaulting party.

(4) A non defaulting party may terminate the framework agreement where

(a) the defaulting party is in material or persistent breach of its obligations under these Rules, any ancillary agreement or the framework agreement;

(b) the breach of the defaulting party has a material effect on the ability of the non- defaulting party to discharge its duties under these Rules; or

(c) in the opinion of the non-defaulting party, the defaulting party's breach affects the operational integrity of the transmission system.

(5) A default notice shall specify

(a) the breach giving full particulars; and

(b) in reasonable detail, the remedy and the period within which a prudent operator requires to remedy the breach except that the period shall not be less than sixty days.

(6) A termination under this rule shall be effected upon the service of the termination notice which shall state the day of the termination.

(7) The non-defaulting party shall withdraw the termination notice before the expiry of the notice, if the

(a) defaulting party has remedied the breach prior to the expiry of the notice period; or

(b) Commission has instructed the non-defaulting party to withdraw the termination notice upon determining a dispute brought before it by the party to the framework agreement.

Consequences of general termination

15. (1) If a shipper, bulk customer or distribution company's framework agreement is terminated by the utility in accordance with rule 14, the balance of the payments due, accrued or outstanding to the utility under these Rules and any ancillary agreement at the time of termination shall immediately become due and payable by the shipper, bulk customer or distribution company to the utility.

(2) The payment by the shipper, bulk customer or distribution company of sums due under subrule (1) shall not relieve the utility of its obligation to mitigate any outstanding amount payable by the shipper, bulk customer or distribution company in respect of the unexpired period of the shipper, bulk customer or distribution company's agreement.

(3) Capacity reserves of the shipper, bulk customer or distribution company, ancillary agreements and other agreements entered into by the shipper, bulk customer or distribution company with the utility under these Rules shall terminate immediately upon termination of the framework agreement.

(4) Termination of a shipper, bulk customer or distribution company's framework agreement shall not extinguish or relieve the shipper, bulk customer or distribution company from

(a) the discharge of a duty or liability accrued under these Rules, the framework agreement and an ancillary agreement at that time; or

(b) the remedying of an outstanding breach under these Rules, the framework agreement and an ancillary agreement.

Termination of obligations by shipper, bulk customer or distribution company

16. (1) The utility, a shipper, bulk customer or distribution company may terminate the framework agreement, a party's obligations under these Rules and an ancillary agreement by giving to the other party not less than twenty-one days notice, if

(a) a shipper, bulk customer or distribution company is no longer the registered shipper, bulk customer or distribution company at an entry point or off-take point; or

(b) outstanding breaches of these Rules or any of the agreements specified in paragraph *(b)* have been remedied or waived by the other party.

(2) Without limiting subrule (1), the utility may terminate the framework agreement, a party's obligations under these Rules and any ancillary agreement if the amount payable by the shipper, bulk customer or distribution company the utility has not been paid in full.

(3) A shipper, bulk customer or distribution company may notify the utility that the distribution company or bulk customer wishes to remain a shipper, bulk customer or distribution company for the purposes of these Rules, on receipt of notice of termination and prior to the expiry of the notice period, and the utility shall withdraw the notice of termination.

Copy of notice to the Commission

17. The utility, a shipper, bulk customer or distribution company shall provide the Commission with a copy of each notification issued under rule 16.

Emergency and abnormal operations

Emergency

18. (1) The existence of an emergency shall be determined by the utility, irrespective of the cause of the emergency and of whether the utility or another person may have caused or contributed to the emergency.

(2) An emergency shall continue up to a time when the utility determines that the circumstances giving rise to the declaration of the emergency no longer exist and that normal operations of the transmission system and full implementation of these Rules may be resumed.

Occurrence of an emergency

19. (1) Where an emergency arises, the utility shall,

(a) promptly inform shippers, bulk customers and distribution companies, the Commission and the general public of the commencement, nature, extent and expected duration of the emergency by means reasonably available to the utility at the time; and

(b) as far as is practicable keep the shipper, bulk customer and distribution company informed of material changes and developments in respect of the emergency and notify the shipper, bulk customer or distribution company as soon as is reasonably practicable of the time at which the utility considers the emergency would cease.

(2) Each shipper, bulk customer or distribution company shall

(a) comply with the emergency measures as instructed by the utility;

(b) ensure that the final consumer complies with emergency measures instructed by the utility to the shipper, bulk customer or distribution company;

(c) notify the utility of the action taken by the shipper, bulk customer, or distribution company and notify the final consumer to comply with the emergency measures; and

(d) comply with directions issued by the utility to bring the emergency to a halt or to prevent an emergency.

(3) The utility may, impose on the shipper, bulk customer or distribution company an obligation it considers reasonable or necessary to resolve or mitigate the impact of the emergency by way of notice to each shipper, bulk customer or distribution company during an emergency and each shipper, bulk customer or distribution company shall comply with the obligation upon receipt of the notice.

Emergency measures

20. (1) The utility may to the extent it considers necessary take measures and require a shipper, bulk customer or distribution company to

(a) put in place emergency measures to avert or reduce the likelihood of or likely scale of an emergency;

(b) overcome or contain an emergency;

(c) avert or reduce the hazard presented by an emergency; and

(d) restore natural gas supply and normal operation of the transmission system in the course of and after taking emergency measures.

(2) Emergency measures may include action to be taken or not to be taken by the utility, a shipper, a bulk customer or distribution company as instructed by the utility.

(3) The utility and each shipper, bulk customer or distribution company shall acknowledge that in an emergency their respective interests shall be subordinated to the need to take emergency measures in accordance with subrule (1).

(4) To ensure co-ordination of emergency measures, a shipper, bulk customer or distribution company shall only take emergency measures in accordance with sub-rule (1) and in accordance with instructions given by the utility.

(5) An emergency measure taken by the utility, a shipper, bulk customer or distribution company in compliance with a requirement of subrule (1) shall not be considered to be a breach of these Rules, the framework agreement or an ancillary agreement.

(6) The utility shall not be in breach of its obligation to accept natural gas tendered for delivery to the transmission system at an entry point or to make natural gas available for off-take from the transmission system to the extent that, as a result of the emergency measures taken, natural gas tendered for delivery is not accepted or natural gas is not made available for off-take.

(7) In the event of an emergency, the utility shall implement the relevant transmission system emergency procedures in addition to measures specified in subrule (1).

Entry point control during emergency

21. (1) Subject to the obligations set out in rule 22 (2), where emergency measures include increasing or decreasing the delivery or rate of flow of natural gas to an entry point, the utility may issue appropriate instructions in respect of the increase or decrease to the shipper utilising the entry point.

(2) In the event that the bulk customer or distribution company is not a shipper it may exercise nomination rights under the respective agreement with a shipper if necessary or when requested by the utility.

Off-take point control during emergency

22. (1) Where emergency measures include the reduction or discontinuation of off-take of natural gas at an off-take point on the transmission system, the utility shall first seek voluntary reductions of off-take by bulk customers and distribution companies, where practicable and if the utility cannot achieve the requisite reduction of off-take voluntarily in a timely manner, the utility may require a bulk customer or distribution company to reduce demand for natural gas on the transmission system.

(2) In reducing demand of a bulk customer or distribution company, the utility shall give due consideration on timely notification to a bulk customer or distribution company, and where appropriate, include in the negotiation of the relevant framework agreement, practical terms and conditions to enable a bulk customer, discontinue off-take in a manner that will protect its essential or major capital items of plant or allow the final consumer to change to alternative fuels.

(3) Where the utility is unable to take an emergency measure and to exercise other rights which the utility has under these Rules, the utility may disconnect natural gas at an off-take point if a bulk customer or distribution company and the final consumer do not comply with an instruction given under subrule (1).

(4) For the purpose of calculating balancing charges, an emergency shall be considered to have ceased only with effect from the start of the day at 06.00 hours after the utility has notified the relevant bulk customer of the abatement of the emergency.

Consequences of emergency

23. (1) In the event of an emergency, the utility may suspend the framework agreement and any ancillary agreement except for the financial obligations of a shipper, bulk customer or distribution company under these Rules, the framework agreement and any ancillary agreement with respect to a shipper, bulk customer or distribution company.

(2) The utility and each shipper, bulk customer or distribution company shall agree that it may be necessary for each of them to divert resources from other activities during an emergency, which may potentially result in a temporary impairment of their respective abilities subsequent to carrying out their respective obligations other than financial obligations.

(3) An impairment resulting from a diversion of resources may constitute force majeure but shall not constitute a breach of these Rules, framework agreement or any ancillary agreement.

Emergency costs

24. (1) The utility shall

(a) not be liable for costs arising out of an emergency incurred by a shipper, bulk customer or distribution company or as a result of taking emergency measures or other measures imposed by the utility; and

(b) not engage in any cash transactions with regard to costs incurred by the utility in respect of an emergency or as a result of taking an emergency measure or other measure imposed by the utility and charged to a disbursement account.

(2) Subject to subrules (3) and (4) each bulk customer or distribution company shall be personally liable for its own costs incurred in respect of an emergency.

(3) A bulk customer or distribution company is not personally liable for its costs if

(a) the off-take of natural gas by the first bulk customer or distribution company is reduced in accordance with rule 22;

(b) the effect is that the first bulk customer or the distribution company's natural gas is off-taken by another bulk customer.

(4) Where a bulk customer or distribution company is not personally liable under subrule (3), the benefiting bulk customer or distribution company shall on behalf of the first bulk customer or distribution company pay the price for the quantity of the first bulk customer's or distribution company's natural gas off-taken by the benefiting bulk customer or distribution company to the utility which shall pay the sums received to the first bulk customer or distribution company.

Emergency reporting and audit

25. (1) The utility shall prepare an emergency report in respect of an emergency and shall submit a copy of the report to the Commission.

(2) In the event of an emergency, either the Commission or the affected shipper, bulk customer or distribution company may within six months after the end of the emergency, require an audit to be conducted by a reputable independent expert to determine the cause and the remedial action required to be taken to minimize the likelihood of the reoccurrence of the emergency and prepare an audit report.

(3) Where the Commission or the affected shipper, bulk customer or distribution company requires the appointment of an independent expert the utility shall appoint a professional entity approved by the Commission and provide the entity with information to establish

(a) the cause of the emergency; and

(b) where relevant, the remedial action that needs to be taken to minimize the likelihood of the reoccurrence of emergency.

(4) The cost of an audit shall be borne by the affected shipper, bulk customer or distribution company if the audit was requested by the shipper, bulk customer or distribution company.

(5) A copy of the audit report prepared under subrule (2) shall be submitted to the Commission.

(6) A copy of the audit report shall be made available to the affected shipper, bulk customer or distribution company.

(7) The cost of a remedial measure as a result of the audit and effected by the utility shall be recoverable from the person identified in the audit as being the cause of the emergency, taking into account, the nature and scope of the remedial measure.

(8) The utility may appeal against a determination in accordance with the dispute resolution procedures provided for by law in respect of the natural gas transmission utility standards of performance where the result of an audit determines that the emergency would not have occurred but for the wilful misconduct of the utility.

(9) The utility is liable to the shipper, bulk customer or distribution company for the contravention of the standards of performance as required by law for the transmission of natural gas.

System emergency manager

26. (1) The utility is the system emergency manager.

(2) The utility shall prepare a manual containing details of arrangements and procedures established by the utility for system emergency management as approved by the Commission.

(3) The manual shall be approved by the Commission.

(4) The utility shall provide each shipper, bulk customer or distribution company with a copy of the manual.

Maintenance

Periodic inspection and tests

27. (1) A pressure-regulating station, a pressure-relief device, and each ancillary equipment shall be subjected by the utility to systematic inspections at intervals of not more than three months.

(2) The utility shall conduct appropriate checks on each pressure-device, pressure-regulating station, pressure relief device and ancillary equipment to determine whether the pressure-regulating station, the pressure relief device and ancillary equipment are

(a) in good operating condition;

(b) adequate in terms of capacity and reliability of operation for the service for which they are employed;

(c) set to function at the correct pressure;

(d) protected from dirt, liquid or other condition that might prevent its proper operation;

(e) located in a safe position adjacent from road and construction works and that the equipment contained in it is adequately protected from damage that may arise from road alterations or other nearby construction activities; and

(f) adequately marked in accordance with the required safety standards.

Pressure regulators

28. (1) Despite rule 27(1), the utility shall, where a pressure regulator indicates an abnormally high or low pressure, inspect the regulator and the ancillary equipment and immediately take any necessary measure to rectify the unsatisfactory operating condition.

(2) The utility shall check outlet pressures by taking pressure recordings daily at time intervals of not more than twenty-four hours to ensure that pressures are being maintained at a safe level.

Pressure-relief valves

29. (1) The utility shall test each pressure-relief valve in place within a periodic interval of not more than three months to determine whether it has sufficient capacity to limit the pressure on the facilities to which it is connected to the desired maximum pressure.

(2) Where the test is not feasible, a pressure-relief valve shall be tested by the utility by calculating the required capacity of the relieving equipment at each station and comparing the results with the rated or experimentally determined relieving capacity of the installed equipment for the operating conditions under which it works.

(3) If it is determined that the relieving equipment is of insufficient capacity, it shall be replaced with equipment that has the adequate capacity or further equipment may be installed to provide the required capacity.

Pit and vault maintenance

30. (1) The utility shall conduct regular scheduled inspections within a periodic interval of not more than three months of each pit housing pressure-regulating and pressure-limiting equipment to determine if it is in physical condition and adequately ventilated.

(2) An inspection shall include the testing of the atmosphere in the pit for combustible gas.

(3) If gas is found in the atmosphere of the pit, the equipment in the pit shall be inspected for leakage and the source of the leakage sealed.

(4) The ventilating equipment shall also be inspected to determine if it is functioning properly and the ventilating ducts cleared if obstructed.

(5) The condition of the vault and pit covers shall be carefully examined to ensure that they do not present a risk to public safety.

Valve maintenance

31. (1) The utility shall periodically inspect pipeline valves.

(2) Pipeline valves shall be fully operated at least once a year to ensure a safe fluctuation in the flow rate.

Continuing surveillance

32. (1) The utility shall have a procedure for continuing surveillance of its facilities as a means of maintaining the safety of the system.

(2) Studies shall be initiated and appropriate action taken immediately unusual operating and maintenance conditions such as valve failures, pipe leakage history and an unexpected fluctuation in the flow rate occurs.

(3) If the studies indicate that the facility is in an unsatisfactory condition, but no imminent risk exists that requires immediate action, the utility shall initiate a planned programme to recondition or phase-out the facility.

(4) If the facility cannot be reconditioned or phased-out, the maximum allowable operating pressure shall be reduced to a level commensurate with the requirement of any applicable rule.

Pipeline patrolling

33. (1) The utility shall maintain a periodic pipeline patrol programme to observe

(a) surface conditions on and adjacent to the pipeline right-of-way;
(b) indications of leaks;
(c) construction activity other than that performed by the utility; and
(d) other factors that affect the safety and operation of the pipeline.

(2) The weather, terrain, size of pipeline, operating pressure, and other conditions shall be taken into account in determining the frequency of patrol.

(3) Pipeline patrols shall be at a minimum of four times in each year with not more than four months between two consecutive patrols.

External corrosion

34. (1) Periodic inspection and tests shall be conducted by the utility to determine if the installed corrosion control methods used are adequate and effectively protect the pipe line.

(2) Whenever a portion or section of an underground facility is uncovered, an inspection shall be made to determine if protection is needed or if installed protection is adequate at that point.

Internal corrosion

35. (1) When an active corrosive agent is known to be present in the natural gas transmitted or if evidence of internal corrosion is discovered, the utility shall periodically analyse the gas to determine the concentration of the corrosive agent and take precautionary measures to prevent the development of a hazardous condition.

(2) If for a stated reason a pipeline is cut, the internal surface shall be carefully inspected by the utility for evidence of internal corrosion.

Corrosion records

36. (1) The utility shall for each pipeline inspection record the

(a) external or internal corrosion covering conditions found;
(b) adequacy of cathodic protection;
(c) condition of pipe coating;
(d) depth of pits and perforations noted; and
(e) extent of corroded area.

(2) If repairs are made, the method used shall be documented.

Records of leakages

37. (1) The utility shall keep a record of leakages discovered on a pipeline and repairs made to it.

(2) Pipeline breaks shall be recorded in detail by the utility.

(3) These records together with leakage survey records, pipeline patrol records and other records related to routine or usual inspections of a pipeline shall be kept as long as the section of the pipeline to which the record relates remains in service.

Pipeline system records

38. (1) The utility shall prepare and keep up-to-date drawings of the pipeline system including their location and shall also keep on file records that show the results of pipeline acceptance tests.

(2) The drawings of the pipeline system including their location shall be made available upon reasonable request to

(a) contractors;
(b) other utilities;
(c) governmental agencies; and
(d) other interested persons.

Odorization

39. (1) The utility shall odorize the gas transmitted through the transmission system.

(2) Periodic sampling of natural gas shall be conducted by the utility to determine the effectiveness of odorizing and the utility shall keep a record of this.

Abandoning of transmission facilities

40. (1) The utility shall have an abandonment responsibility plan in its operating and maintenance procedure for sealing off the supply of gas to abandoned facilities including pipelines, mains, services, control lines and equipment.

(2) An abandonment responsibility plan shall among other things oblige the utility to

(a) decommission and properly dispose of pieces of equipment and installations at the end of its useful life;
(b) provide decommissioning proposals as part of its development plan submitted to the Commission for approval;
(c) review and modify an approved decommissioning plan periodically to ensure that it is consistent with the obligation for decommissioning and the operational and maintenance plan; and

(d) pay money for a complete decommissioning in accordance with the approved decommissioning plan, into a bank account opened for that purpose and managed by the Commission.

(3) The utility shall not be relieved of its obligation, to complete an approved decommissioning plan at the end of an installation's technical life, where there is a shortfall in funds available for the purpose.

(4) Funds paid for decommissioning shall be part of the project cost in respect of which the utility shall claim tax relief as if it were an operating expense.

General provisions

Offences and penalties

41. (1) Where the utility, a shipper, bulk customer or distribution company contravenes an obligation imposed under these Rules the Commission may impose a pecuniary penalty on the utility, shipper, bulk customer or distribution company.

(2) A person who

(a) wilfully interferes or knowingly allows interference with the utility's transmission system;

(b) obtains natural gas in an illegal manner; or

(c) tampers with or breaks a seal on a meter

commits an offence and is liable on summary conviction to a fine not exceeding three hundred penalty units or imprisonment for a term not exceeding three years or to both.

(3) Where an offence under these Rules is committed by a distribution company or a bulk customer which is a body corporate, a partnership or other firm, every director or officer of that body corporate or any member of the partnership or firm or other person concerned with the management of the bulk customer or distribution company shall be considered to have committed the offence and is on summary conviction, liable to payment of compensation for any damage resulting from the breach and to a term of imprisonment not exceeding five years or to both, unless the person proves to the satisfaction of the court that

(a) due diligence was exercised to secure compliance with the provisions of these Rules; and

(b) the offence was committed without the person's knowledge, consent or connivance.

NATURAL GAS TRANSMISSION UTILITY (TECHNICAL AND OPERATIONAL) RULES, 2007

Interpretation

42. Unless the context otherwise requires, in these Rules

"Act" means the Energy Commission Act, 1997 (Act 541);

"back-up capacity" means capacity reserved for a period of twelve months by the utility for a shipper, at an entry point which is different from the registered entry point of the shipper;

"balancing charge" includes a charge

(a) that arises out of the difference or inbalance between the in put and output quantities recorded by the utility on behalf of the wholesale supplier, bulk customer or distribution company for a specific period; and

(b) debited or credited to the disbursement account as a result of a balancing action taken by the physical balance of the transmission system;

"bulk customer" means a customer that purchases or receives natural gas of an amount or level specified by the Commission for consumption and not for delivery or resale to others;

"Commission" means the Energy Commission established under section 1 of the Energy Commission Act, 1997 (Act 541);

"day" means a calendar day;

"Day" means a period beginning at 06:00 hours on any day and ending at 06:00 hours on the following day;

"Day D" means the day on which an activity pursuant to these Rules is scheduled or requested to occur or should have occurred;

"Day D-1 or D-1" means the day immediately preceding day D;

"difficult day" means a day declared by the utility where there is insufficient flexibility available on the transmission system to accommodate a bulk customer within the day's profile at a bulk customer's off-take, other than the profile which specifies a uniform off-take rate;

"disbursement account" means an account where all amounts received from every bulk customer and distribution company in respect of balancing charges are lodged;

"emergency" means an event or a circumstance or a combination of events or circumstances which have occurred or are likely to occur and which in the opinion of the utility adversely affects, or is likely to have an adverse effect on the safety or operational integrity of the national transmission system for natural gas or which results in

or is likely to affect the safety of life, property or the environment and may refer to

(a) the event or circumstance which gives rise to the emergency;

(b) the safe conveyance of natural gas by the transmission system being significantly at risk;

(c) natural gas conveyed by the transmission system being at a pressure or of a quality as to constitute a danger to life, property or the environment when off- taken from the national transmission system;

(d) an escape or suspected escape of natural gas;

(e) the utility's inability to maintain safe pressures within the transmission system due to interruption or disruption to the transmission system or a connected system;

(f) events or circumstances in a connected system either upstream or downstream of the transmission system;

(g) an insufficiency of deliveries of natural gas to and from the transmission system; and

(h) any actual or potential failure of or damage to the transmission system;

"framework agreement" means an agreement entered into between the utility, a shipper, bulk customer or distribution company by which the utility and the shipper, bulk customer and distribution company agree to be bound by

(a) the procedure for obtaining and terminating transmission and interconnection services for natural gas;

(b) the method of response to a request for services; and

(c) maps and diagrams of its natural gas transmission facilities in the country as required under section 24 (2) *(c)* of the Act;

"natural gas" means any hydrocarbon or a mixture of hydrocarbon and other gases which at a temperature of sixty degrees Fahrenheit and at atmospheric pressure are predominantly in a gaseous state;

"non-compliant gas" means natural gas tendered for delivery at the entry point which fails to conform to the entry specification;

"off-spec gas" means natural gas which fails to conform to the off-take specification when the utility makes it available for off-take at an off-take point;

"off-take" means exiting natural gas from the national transmission system;

"operational flow order" means an order issued by the utility to the distribution company or bulk customer on or before a difficult day or a restricted capacity day, or in anticipation of a difficult day or a restricted capacity day instructing the distribution company or bulk customer to prevent or minimise the impact of a difficult day or a restricted capacity day occurring in relation to the national transmission system;

"pipe" means a pipe of tubing used in the transportation of natural gas;

"pipeline" means the physical facility including a pipe, valve, and metering equipment through which natural gas is transported;

"primary capacity" means capacity which is reserved by a shipper, bulk customer or distribution company through a framework agreement directly from the utility and which entitles the utility to reject an application for capacity, including the right to reject if a shipper, bulk customer or distribution company has failed to provide sufficient financial security as required by these Rules;

"regulating and metering station" means a facility that receives natural gas from a high pressure transmission pipeline, liquefied natural gas storage, natural gas well or natural gas processing plant and from where distribution of natural gas begins;

"restricted capacity day" means a day declared by the utility on which the capacity of the national transmission system or any localized part of it is reduced for reasons of physical or operational constraint;

"shipper" means a person licensed by the Commission and registered by the utility and that contracts the utility to transport natural gas in the national interconnected transmission system;

"transmission pipeline" includes a pipeline from a hub of gathering lines, regulating and metering stations, natural gas storage facility, a liquefied natural gas terminal or directly from a production field to distribution centres, storage facilities and bulk customers;

"transmission system" means the national interconnected transmission system;

"utility" means the person granted the transmission licence as a public utility under section 23 of the Act to operate the national interconnected transmission system for the transmission of natural gas; and

"wholesale supplier" means a person licensed under the Act to install and operate facilities to procure or produce natural gas for sale to bulk customers or to a distribution company for distribution and sale to consumers.

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SCHEDULE

GAS SPECIFICATIONS

(Rules 7(2) and 8 (5) (b))

PART A—COMPOSITION (BY VOL%)

Gas components	Maximum	Minimum
Methane	95	85
Ethane	10	0
Propane	8	0
Butane + Paraffine (C4+)	5	0
CO_2	8	
N_2	6	
Total Inert ($CO_2 + N_2$)	12	
O_2 (by volume)	10 ppm	
Water Content	7lbs/MMscf	
H_2S (by volume)	4 ppm	
Total sulfur	28 ppm	0 ppm

PART B—HEATING VALUE (BTU/SCF) AND DELIVERY TEMPERATURE

	Maximum	Minimum
Higher	1150	950
Lower	1050	865
Wobbe Index (Gross)	52	47
Delivery Temperatures	49 C (120°F)	5° C (41°F)

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PART C—SOLIDS CONTAINED IN RAW NATURAL GAS

Sand, dust, gum, other solids

Free by normal commercial standards of objectionable odor, dust, solid or liquid matter, wax, gum and gum forming constituents, or aromatic hydrocarbon which might cause injury to or interfere with proper operation of all equipment through which it flows.

FLUID CHARACTERISTICS

PART D

The design raw gas consumption (dry basis)

Gas components	Mol %
Methane	88.75
Ethane	5.93
Propane	1.28
i-Butane	0.26
n-Butane	0.26
i-Pentane	0.09
n-Pentane	0.06
Hexanes	0.06
Heptane +	0.10
CO_2	2.55
N_2	0.66
O_2	0.00
H_2S	0.00

PROF. F.K.A. ALLOTEY
Chairman, Energy Commission

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