UNC

Supplemental

Agreement

|  |  |
| --- | --- |
| Site  | Partington Offtake |
| Site Owner | Cadent Gas Limited |
| Site User(s) | National Grid Gas plc |
| Date | 25th January 2018 |

**Any issues concerning the content within this document should be raised with the Site Owner via email to: address@operatororganisation.com**

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**Section 1: Site Details**

|  |  |
| --- | --- |
| Name of the Offtake Site | Partington |
| Postal address of the Offtake Site | Off Common LaneCarringtonM31 4QJ |
| Co-ordinates for the Offtake Site | OS Coordinates | BNG Coordinates |
| SJ 750 919 | E: 372654, N: 392085 |
| Owner of the site (the Site Owner) | Cadent Gas Limited |
| Site User(s) | National Grid Gas plc |
| Site safety and access arrangements | Dual Lock and Keys allowing each party to access to site as and when required.ARC monitored site. Access via Swipe Card only. Please contact Site Owner Network Manager to arrange access. |
| Third Party Interests | None.i.e. third parties that hold a lease – acquiva any NGG customer connections on site any third party assets |

**Section 2: Site Assets & Ownership**

**2.1 Points of Offtake**

|  |  |
| --- | --- |
| Points of Offtake | There are two formal points of offtake at this site. These are:* Inlet of Cadent Valve GF10
* Inlet of Cadent Valve GF51
 |
| Exceptions | All assets downstream of the ‘points of offtake’ belong to the site owner, Cadent, unless specified below:* The NGG P1 Transmitter is located downstream of the Points of Offtake between Cadent valves x and y.

All assets upstream of the ‘points of offtake’ belong to the site user, National Grid plc, unless specified below:* Cadent Sample Point is located between NGG Valve 362902 and the points of offtake valves as stated above.
 |
| Other  | * Cathodic Protection system is owned by the site owner (see Section 2.4)
* Telemetry is Shared (see Section 2.3)
* Shared Electrical arrangements exist (refer to Section 2.1)
* All ISS assets are owned by the site owner
 |
| Drawing/Diagram | Please refer to the following Site Owner drawings: |
| PSD | NW/3629NS/G/003 |
| GA | NW/3629NS/P/001 |
| Electrical SLD | NW/3629NS/P/001 |
| Other (please specify) |  |

**2.2 Electrical Arrangements**

2.2.1 Main Arrangements

|  |  |
| --- | --- |
| Main Supply | One main feed to site.Power Supply cubicle, main RCD and busbar owned by site owner. |
| Specific Ownership | * All Distribution Boards (1-9) owned by Cadent Gas Ltd
* Block Valve Unit owned by National Grid plc.
 |

2.2.2 Shared Boards

|  |  |
| --- | --- |
| Board Number or Name | **DB3** |
| Board Owner | Cadent Gas Ltd |
| Specific Ownership | *Way/Fuse* | *Owner* | *Asset / Description* |
| 1 | NGG | RE Valve 362901 |
| 2 | Cadent | LE Valve (3629)49 |
| 3 | Cadent | Spare |
| 4 | NGG | RE Valve 362902 |
| 5 | Cadent | LE Valve (3629)69 |
| 6 | Cadent | Spare |
|  |  |  |

2.2.2 Actuated Valves

|  |  |  |
| --- | --- | --- |
| Specific Ownership | ***Cadent*** | ***NGG*** |
| *Valve* | *Type* | *Valve* | *Type* |
| 362949 | LE | 362901 | RE |
| 362969 | LE | 362901 | RE |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

2.2.3 Hydraulic Valves

|  |  |  |
| --- | --- | --- |
| Specific Ownership(note: Any RGH’s will be connected to the site’s telemetry arrangements) | ***Cadent*** | ***NGG*** |
| *Valve* | *Type* | *Valve* | *Type* |
| GF241 | LGH |  |  |
| GF242 | LGH |  |  |
| GF243 | LGH |  |  |
| GF244 | LGH |  |  |
| GF245 | LGH |  |  |
| GFA74 | LGH |  |  |
|  |  |  |  |

2.2.4 Standby Power Arrangements

|  |  |  |  |
| --- | --- | --- | --- |
| Item | Owner | Location | Supports |
| Generator Inlet Socket | Cadent | o/s on Electrical Building exterior | Site via ISOL5 |
| Generator Inlet Socket | Cadent | Inside Instrument Room | DB5 and DB7 |
| UPS | Cadent | Instrument Room | DB7 |
| Ulysses PSU | Cadent | Instrument Room | Cadent Telemetry |
| UPS | Cadent | ISS Kiosk | ISS Requirements |
| Comments: |

**2.3 Telemetry Arrangements**

2.3.1 Main Arrangements

|  |  |
| --- | --- |
| Specific Ownership | ***Site Owner (Cadent)*** |
| Assets | IS Barrier Box | Notes:Located in the Switch Room of the Control Building.NGG P1 Transmitter is connected to site owner RTU.NGG Microbox Unit connected to site owner Telemetry system.Line: 0161 - 775 1020 (ISDN) |
| RTU |
| Router |
| Ethernet Hub |
| Ports |
| DSL  |
| Satellite Dish / Radio |
| Non IS I/F Box |
| ***Site User (NGG)*** |
| Assets | IS Barrier Box | Notes:IRIS Telemetry system on site located in IRIS kiosk.Line: 0161 - 775 3676 (ISDN) |
| RTU |
| Router |
| Ethernet Hub |
| Ports |
| DSL  |
| Satellite Dish / Radio |
| Non IS I/F Box |

2.3.2 P1 Pressure Transmitter

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Transmitter | Owner | Demarcation | Location | RTU |
| P1 | NGG | Above Offtake Valves  | Between NGG valves 362901 and 362902 | Cadent |

2.3.3 Other Pressure Transmitters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Transmitter | Owner | Demarcation | Location | RTU |
| P2 | NGG | Above Points of Offtake |  | NGG |
| P3 | NGG | Above Points of Offtake |  | NGG |
| P4 | NGG | Above Points of Offtake |  | NGG |
| P5 | NGG | Below Points of Offtake  |  | Cadent |

2.3.4 Shared Barrier Loops

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Transmitter | Owner | Transmitter | Owner | Loop |
| P1 | NGG | P5  | Cadent | Position 1. Channels 1 & 2 |

Any maintenance required to P1 will require prior notification via the OAD process.

**2.4 FWACV Arrangements**

|  |  |  |
| --- | --- | --- |
| FWACV Asset | Numberon Site | Location, description & ownership |
| Sample Point  | 1 | 1 | Downstream of Valve 362902 or GF02 on NTS pipework | Cadent |
| 2 |  |  |
| PRU’s  | 4 | 1 | All PRU’s are owned by the Site Owner | Cadent |
| 2 |  |  |
| Chromatographs | 1 | 1 | All Chromats are owned by the Site Owner | Cadent |
| 2 |  |  |
| OMNI Computers | 1 | 1 | OMNI Computer – x (Telemetry Room) | Cadent |
| 2 | OMNI Computer – y (Telemetry Room) | NGG |
| Controllers | 1 | 1 | Controller – x (Telemetry Room) | Cadent |
| 2 | Controller – y (Telemetry Room) | NGG |
| Mircobox / AB’s | 1 | 1 | Allen Bradley – x (Telemetry Room) | Cadent |
| 2 | Mircobox – y (Telemetry Room) | NGG |
| Moxa Unit | 1 | 1 | Unit owned by Cadent. Port 1 Channel 2 has a NTS assets connected. All other Ports connected relate to Cadent assets. | Cadent |
| ADAM Unit | 1 | 1 |  | Cadent |
| Brief description of how systems are shared* The NTS have their own chromat, controller and mircobox assets installed on site. These are connected to the Ethernet hub within the Cadent Telemetry system in order to send data back to the SCADA network. The Ethernet Hub and comms system downstream thereof is owned by Cadent as
 |

**2.5 Cathodic Protection Arrangements**

|  |  |  |
| --- | --- | --- |
| CP System / Asset | Owner | Comments |
| AGI TR  | Cadent | Location: Electrical RoomAGI TR protects entire offtake site within I/Js 1, 2, 3, I/F5, 6 and Carrington Shell pipeline. |
| Pipeline TR  | Cadent | Location: Electrical RoomPipeline TR protects 5 Cadent pipelines and also the Feeder 4 pipeline Partington to Warburton |
| I/J’s 1  | NGG | Includes connection/cables from joint to TR |
| I/J’s 2, 3, I/F5 and 6 | Cadent | Includes connection/cables from joint to TR |
| Groundbeds | Cadent | 2 Groundbeds on site:1 located in pit by Valve GF731 x pit by Valve x |
| Drain Point(s) | Cadent | 1 Drain Point connection in vicinity of CGL Valve GF18. |
| Shared Test Posts | n/a | No Shared Posts on site |
| Data Loggers | Various | 3 data loggers on site. * NGG own FM04
* CGL own the other two
 |
| Other Information:* The Pipeline TR on site providing protection to NGG's Feeder 4 to Warburton. This also protects the CGL PS005 to Warburton Tunnel and Turnmoss Rd.
 |

**2.6 Buildings, structures and enclosures**

All building, structures and enclosures are owned by the site owner unless listed below:

|  |  |  |  |
| --- | --- | --- | --- |
| Specific Ownership | *Asset* | *Owner* | *Location* |
| ISS Assets | Cadent | All ISS assets are owned by the site owner but maintenance via an ARC arrangement. |
| Regulator Building | NGG |  |
| Metering Kiosk | NGG |  |
| FWACV Kiosk | NGG |  |
|  |  |  |
|  |  |  |
|  |  |  |

**2.7 Other Shared Arrangements**

|  |  |  |  |
| --- | --- | --- | --- |
| *Asset* | *Owner* | *Location* | *Description of Shared Arrangement* |
| LGT | Cadent | Downstream of Valve x  | The LGT sample point shared a common feed and PRU. The data is then sent back to the separate FWACV systems as documented in Section |
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**Section 3: Site Services:**

The following services are provided by the Site Owner to the Site User:

|  |  |
| --- | --- |
| Cathodic Protection | Where any Site User assets are connected to a Site Owner’s Cathodic Protection system or Transformer Rectifier, permission via the OAD process must be ascertained before repair/replacement or maintenance is undertaken. In relation to cathodic protection systems, the Site Services (to be provided by the Services Party) include:* maintaining and testing such cathodic protection systems (and planning for such maintenance in accordance with the provisions for Relevant Maintenance in Section G of the Offtake Arrangements Document); and
* providing each Site User a report certifying compliance of the cathodic protection systems agreed standards no later than 14 days after any maintenance or testing in accordance with sub-paragraph (a).
 |
| Electrical | All power provided to site users assets as provided via the main supply and busbar. This includes lighting to all buildings, site flood lighting, and space heating. See Section 2.2 for asset ownership. |
| Security | ISS Fence and supporting assets on site(See Section for access and 2.6 for ownership) |
| General Site Services | * Drainage
* General Site Maintenance
* Security (See Section 1.1)
 |
| Telecommunications | The following lines are available on site: |
| *Line* | *Type* | *Owner* | *Comment* |
| 0161 - 775 1020 | ISDN | Cadent | Cadent’s Telemetry Line. Site User to retrieve data from Site User FWACV system. |
| 0161 – 775 8440 | PSTN | Cadent | Site Land Line for all parties to use in Instrument Room in Main Control Building |
| Telemetry | All Telemetry assets except the P1 Transmitter are owned by the Site Owner (See Section 2.3)The following Site User’s assets are connected to the Site Owners Telemetry system:* The P1 transmitter is connected to the site owners IS Barrier Box & RTU.
* The site user’s FWACV system is connected via the site owners Ethernet Hub. (See Section 2.4)
* The site user’s ROV’s are connected via the RTU and routers. This uses the site owners communication system for control.
 |
| Water and Welfare Arrangements | No water or welfare arrangements within the offtake site. Facilities in Security Lodge at the main entrance to the Partington site. |

**Section 4: Measurement Equipment and Permitted Ranges:**

The Measurement Equipment, and the Permitted Range for the Measurement Equipment, are as follows:

|  |
| --- |
| **Flow Rates** |
|  | **Specified Range** | **Permitted Uncertainty Level** |
| **Instantaneous Volume Flow Rate**Based on pressureof 37 barg | Between 3% and 100% of10.8 MCM/day | +/- 2 % of actual flow between 30% and 100% of maximum flow rate. |
| +/- 3.5 % of actual flow between 10% and 30% of maximum flow rate. |
| **Instantaneous Energy****Flow Rate**. Based on mean CV = 39.12 MJ/m³ and pressure of 37 Bar | Between 3 % and 100% of 66.5 TJ/day | +/- 2.1 % of actual flow between 30% and 100% of maximum flow rate. |
| +/- 3.6 % of actual flow between 10% and 30% of maximum flow rate. |
| The offtake should not be operated below 10% of maximum flow rate except where there is no alternative route to deliver gas to the LDZ. |
| **Pressure and Temperature** |
|  | **Specified Range** |  |
| **Offtake Inlet Gas Pressure** | 0 – 80 barg | +/- 0.4% of specified range |
| **Outlet Gas Temperature** | -10 to 40 deg C | +/- 0.2% of specified range |
| **Gas Quality – CV Directed Offtake** |
|  | **Specified Range** | **Permitted Uncertainty Level** |
| **CV** | 35 - 44 MJ/m³ | +/- 0.14 MJ/m³ |
| **Carbon Dioxide** | 0 – 5 mole % | +/- 0.2 mole % |
| **Nitrogen** | 0 - 10 mole % | +/- 0.2 mole % |
| **Relative Density** | 0.5 – 0.8 | +/- 0.002 |
| **Wobbe No.** | 45 - 54 MJ/m³ | +/- 0.19 MJ/m³ |
| **Measurement Equipment** |
| **No. of Meter Streams** | **Stream flow as % of total capacity** | **Meter Type** | **Design Details** |
| 2 stream(s) | 2 x 100% | Orifice | Tube A DIA = 581mm Nominal Plate Bore DIA = 327mm Tube B DIA = 737 mm Nominal Plate Bore DIA = 463 mm  |

**Section 5: Telemetered Data Requirements:**

In this section:

1. a Minimum Requirement is a requirement applicable in relation to any Offtake;
2. a Site-Specific Option is a requirement applicable (in accordance with paragraph (c) below) in relation to certain Offtakes;
3. Site-Specific Options are applicable where so provided under 'Comments' or where agreed between the Parties.
4. Information may be provided under ‘Comments’ in relation to Minimum Requirements and/or Site-Specific Options.

**Part 1 – Analogues**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Point Name** | **Minimum Required** | **Site Specific Options** | **DN Control System** **Point Name** | **NGG Unique Name** | **Comments** |
| Feeder/Inlet Pressure | Yes |  | P1 | P1 | DNP3 Link – Raw Data to GNCC |
| Outlet Pressure | Yes |  | P5 |  | DNP3 Link – Current Value to GNCC |
| Instantaneous Volume Flow | Yes |  | F1 |  | DNP3 Link – Current Value to GNCC |
| Instantaneous Energy Flow | Yes |  | EF1 |  | DNP3 Link – Current Value to GNCC |
| Outlet Gas Temperature |  | Yes | T1 |  | DNP3 Link – Current Value to GNCC Where Fitted |
| Calorific Volume | Yes |  | CV1 |  | DNP3 Link – Current Value to GNCC |
| Relative Density | Yes |  | SG1 |  | DNP3 Link – Current Value to GNCC |
| Nitrogen | Yes |  | N2\_1 |  | DNP3 Link – Current Value to GNCC Except Tracker only sites  |
| Carbon Dioxide | Yes |  | CO2\_1 |  | DNP3 Link – Current Value to GNCC Except Tracker only sites |
| Wobbe | Yes |  | WB1 |  | DNP3 Link – Current Value to GNCC Except Tracker only sites |
| 24 Hour Average CV | Yes |  | CV1\_AVG |  | DNP3 Link – Current Value to GNCC |
| 24 Hour Average RD | Yes |  | SG1\_AVG |  | DNP3 Link – Current Value to GNCC |
| Orifice Standby Differential Pressure |  | Yes | ODP1 |  | DNP3 Link – Current Value to GNCC ODPn (orifice differential pressure x, where x is a numerical identify) only where fitted  |
| Orifice ‘in Use’ Differential Pressure |  | Yes | METER1\_DP |  | DNP3 Link – Current Value to GNCCMETER\_DPn (orifice differential pressure x, where x is a numerical identify) only where fitted  |
| Flow Meter Temperature |  | Yes | FT1 |  | DNP3 Link – Raw Data to GNCCWhere Fitted |
| Compressibility |  | Yes | Z1 |  | DNP3 Link – Raw Data to GNCCWhere Fitted |
| Filter Differential Pressure |  | Yes | FLT\_DP1 |  | DNP3 Link – Current Value to GNCCWhere Fitted  |

**Part 2 – Digitals**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Point Name** | **Minimum Required** | **Site Specific Options** | **DN Control System** **Point Name** | **NGG Unique Name** | **Comments** |
| Power | Yes |  | MAINS1 |  | DNP3 Link – Current Value to GNCC Mains/Phase Fail |
| Charger | Yes |  | CHGR1 |  | DNP3 Link – Current Value to GNCC |
| Site UPS |  | Yes | UPS\_ALM1 |  | DNP3 Link – Current Value to GNCC Where Fitted |
| Gas Quality System UPS | Yes |  | n/a |  | Not Fitted |
| Gas Quality System Alarm | Yes |  | SYSTEM1 |  | DNP3 Link – Current Value to GNCC SYSTEMn (system x, where x is a numerical identity  |
| Generator Alarm |  | Yes | n/a |  | Not Fitted |
| Generator Available |  | Yes | n/a |  | Not Fitted |
| Generator Bypass |  | Yes | n/a |  | Not Fitted |
| Generator Trip |  | Yes | n/a |  | Not Fitted |
| Generator Running |  | Yes | n/a |  | Not Fitted |
| Generator Status |  | Yes | n/a |  | Not Fitted |
| Barrier |  | Yes | BARRIER |  | DNP3 Link – Current Value to GNCC Where Fitted  |
| Local Comms Link Status |  | Yes | n/a |  | Not Fitted |
| RTU Fault |  | Yes | n/a |  | Not Fitted |
| Watchdog |  | Yes | n/a |  | Not Fitted  |
| Filter |  | Yes |  |  | No Digital fitted. See Analogues Section. |
| Maintenance Key |  | Yes | MTCE\_1 |  | DNP3 Link – Current Value to GNCCWhere Fitted |
| Intruder |  | Yes | INTRUDER1 |  | DNP3 Link – Current Value to GNCC Where Fitted  |
| Metering Alarm | Yes |  | MTR\_SUSP1 |  | DNP3 Link – Current Value to GNCC |
| Meter Stream Change |  | Yes | n/a |  | Not Fitted |
| Meter Valve Position |  | Yes | n/a |  | Not Fitted |
| Status Local/Remote |  | Yes | STATUS1 |  | DNP3 Link – Current Value to GNCCWhere Fitted |
| Pressure Override Alarm |  | Yes | OVERRIDE1 |  | DNP3 Link – Current Value to GNCCWhere Fitted |
| CV Not Valid |  | Yes | CV\_N\_VLD1 |  | DNP3 Link – Current Value to GNCCWhere Fitted |
| CV Not Attributable |  | Yes | CV\_N\_ATR1 |  | DNP3 Link – Current Value to GNCCWhere Fitted |
| Outstation Comms Status |  | Yes | OS\_STATUS |  | DNP3 Link – Current Value to GNCCScada Link Telemetry Only |
| Comms Routing Status |  | Yes | CM\_ROUTING |  | DNP3 Link – Current Value to GNCC |
| Valve position of all remotely operable valves(INDICATORS) |  | Yes | V01, V02, V03, V61, V62, V63, V70, V75, V77All Open |  | DNP3 Link – Raw Data to GNCCValves operated by National Grid NTS and Distribution Networks for inlet isolation to be provided where control facilities are necessary but no NTS Physical Telemetry Facilities exist |

**Part 3 – Valve Monitoring / Control**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Point Name** | **Minimum Required** | **Site Specific Options** |  **DN Control System** **Point Name** | **NGG Unique Name** | **Comments** |
| Control Function for remotely operable valves operated by National Grid NTS(CONTROLS) |  | Yes | V01, V02, V03, V61, V62, V63, V70, V75, V76 |  | DNP3 Link – Raw Data to GNCCTo be provided where control facilities are necessary but no NTS physical telemetry facilities exist |

**Part 4 – Integrators**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Point Name** | **Minimum Required** | **Site Specific Options** |  **DN Control System** **Point Name** | **NGG Unique Name** | **Comments** |
| Offtake Volume Integrator | Yes |  | INTG1 |  | DNP3 Link – Current Value to GNCC |
| Offtake Energy Integrator |  | Yes | INT\_EF1 |  | DNP3 Link – Current Value to GNCCWhere Fitted  |
| Fuel Gas for Pre-heater Volume Integrator |  | Yes | INTG2 |  | DNP3 Link – Current Value to GNCCWhere Fitted  |
| Fuel Gas for Pre-heater Energy Integrator |  | Yes | n/a |  | Not Fitted  |

**Section 6: Document History:**

|  |  |
| --- | --- |
| Dated Version | Recorded Changes |
| 30 July 2018 | Assets updated by Cadent following revised arrangements to site owners FWACV arrangements. |
| 01 Oct 2016 | Updated to support Hive down for Cadent sale |
| 01 May 2005 | Document Implemented to support Network Sales process |

**Document End**