Exercise Starburst Gemini Code Contingency
7th June 2018
Results and Findings Report
Version 1.0 Approved

Executive Summary

Gemini Code Contingency Exercise Starburst, held on Thursday 7th June 2018 was facilitated by Xoserve, acting as the Transporters' Agent. It was primarily arranged to test the effectiveness of the Code Contingency Guidelines Document and the industry response to a simulated Gemini Code Contingency. This exercise was carried out to test communication channels only.

The exercise was completed successfully in accordance with the planned timeline, without encountering any major problems and included representation from all the different industry Users it was identified:

1. From the responses that National Grid received, it was evident that there is a disparity in the level of Users' awareness of their responsibilities to the exercise and of the steps to take in an incident.

2. There was a lower level of participation from Users when compared to those who confirmed they would participate in the exercise which decreased the significance of the findings.

3. ANS messages were sent out at the start and end of the exercise but no data is available to determine how many Users read each of the messages.

4. There is scope to improve the usability of the contingency templates particularly in terms of contact details used to exchange data.

5. There is scope to make the Code Contingency Guidance documentation easier to follow.

6. National Grid processes were robust and are able to facilitate a Gemini incident.

The following pages contain a summary of the scope of the exercise, the tests carried out, observations, feedback from participants and recommendations to address lessons learnt.

Contents

1.0 Introduction

Following a series of errors that occurred on 22nd October 2007, National Grid suspended UNC User access to the Gemini system and instigated the Code Contingency arrangements.

Users were required to fax nominations directly to National Grid to upload manually onto the Gemini System. These arrangements remained in place till the system was restored on the 26th October 2007.

The suspension of the system and the effectiveness of the Code Contingency processes required to be undertaken, highlighted the importance of having clear, easily accessible and familiar Code Contingency processes in place.

As a result of these events UNC Review Group 0217 - 'Review of the Code Contingency Arrangements' was established to review the Gemini Code Contingency procedures and recommend the necessary improvements.

The Review Group recommended that:
• all Code Contingency processes and documentation should be consolidated into a single Document

• this document should be easily accessible and
• there should be regular testing of the Gemini Code Contingency arrangements.

They considered that such changes may go some way to mitigate some of the risks and concerns associated with system suspension events experienced in October 2007.

The Review Group agreed that familiarisation with the Code Contingency procedures, by all affected parties, was critical to the successful deployment of the Code Contingency arrangements. This in turn provides all parties with the continued capability to meet their Code obligations during Gemini system failure. Provision of a scheduled ‘Dry Run’ testing programme (Exercises) of the Gemini Code Contingency arrangements may help to facilitate such familiarisation.

The outcome of the Review Group was the implementation of Modification Proposal 0250 – `The Introduction of Gemini Code Contingency Guidelines’, which amongst other changes, proposed that National Grid and its Agent initiated a Gemini Code Contingency testing programme at least every two years. The general view expressed in response to the Proposal's consultation was that such a programme would achieve two key benefits:

1. Familiarisation with the Code Contingency procedures, by all affected parties, critical to the successful deployment of the Code Contingency arrangements. This in turn provides all parties with the continued capability to meet their Code obligations during Gemini system failure.

2. Code Contingency arrangements for any new functionality, implemented through the Gemini system, is tested to ensure that the necessary processes and provisions are in place, and affected parties are familiar with such processes.

Exercise Starburst was the third exercise of this type and was held on Thursday 7th June 2018. Exercise Nebula was the second exercise of this type and was held on Thursday 24th October 2013, the final report for this exercise can be found via the following link:- https://www.xoserve.com/wp-content/uploads/Gemini-Code-Contingency-Exercise-Nebula-V1.pdf
The first of these exercises was called Exercise Star, and was held on Wednesday 8th September 2010, the final report for this exercise can be found via the following link:- http://www.xoserve.com/wp-content/uploads/Gemini_Code_Contingency_Exercise_Star_2010.pdf
The exercise tested the familiarisation of all affected parties with the Code Contingency procedures, and that communications and information transfer via the methods stipulated in the procedures are effective.

2.0 Scope

The primary reason for this exercise was to test the communication channels in the event of a Gemini contingency situation. This was a one day exercise simulating a one Gas Day Gemini outage. Users were instructed to take part in the same Gemini activities they had for Gas Day 7th June 2018 as a paper exercise using the contingency proformas. The exercise took place during normal business hours of 09:00 to 15:00 and all participants were asked to complete a feedback questionnaire after the exercise had finished.

The industry was advised of the date and intentions of the exercise by communications from Xoserve on the 7th of March and the 23rd & 31st of May 18. In addition the exercise was also highlighted at the April 2018 Gas Operational Forum - this can be viewed under the following link:-please see slide 69 for details.
https://www.nationalgrid.com/sites/default/files/documents/Gas%20Ops%20Forum%20full%20pack%20%20-%20April%202018.pdf
The Exercise Starburst information pack and Gemini templates to use for the exercise were published on the Xoserve website prior to the exercise taking place and can be found via the following link confirmed in the Xoserve communications detailed above:-
https://www.xoserve.com/index.php/gemini-contingency-exercise-7-6-18/

This was a paper exercise run alongside normal daily operations. Users were able to send in completed templates via fax or email. National Grid did not enter any data into Gemini that related to the exercise. All communications were prefixed `Exercise Starburst'.

This exercise intended to test the daily processes including Energy Balancing actions, daily Entry Capacity auctions and short term Exit Capacity Auctions.

Energy Balancing:
- GE01_ 1 Nominations/ Bilateral Trades (Non OCM)
- GE01_2 OCM Trades - Physical, Locational & Title Trades
- GE01_3 DM within day
- GC01_4 EU CODE IP Noms/Renoms NTS

Entry Capacity:
- GC04_2 DADSEC
- GC04_2 WDDSEC
- GC04_3 DISEC
- GC06_1 Entry Capacity trading

Exit Capacity:
- GC10_1 DADNEX
- GC10_2 DONEX
- GC10_3 WDDNEX
- GC11_1 Exit Capacity Trading

Communication from National Grid was via email and the Active Notification System (ANS) which is a type of pager system used to inform Users of operational issues, requirements and events. During an actual Contingency National Grid's website would also be updated, but it was decided that to avoid confusion the website would not be used during the exercise.

Two ANS messages were issued during Exercise Starburst to indicate the start and end of the exercise.

`*Exercise Starburst will be commencing shortly, please note that normal operations are not affected and data for Gas Day the 7th June must still be entered into Gemini. Exercise Starburst is a communications exercise only.'*

'Please note that Exercise Starburst has now completed. We no longer require Gemini activities to be submitted via contingency proformas. Many thanks to all that have participated today.'

3.0 Scenario Outline

The scenario assumed that Gemini is unavailable for all. This meant Users must complete the relevant contingency proformas and submit them in a timely manner to the correct National Grid recipient, who in an actual Contingency situation would collate and then have the information entered into Gemini as soon as possible after the Gemini system was restored.

Checking of Energy Balancing, NTS Entry capacity & NTS Exit Capacity data submitted

All the User contact details and a sample of the data received by National Grid via emails and faxes were collated and the data was checked to the live Gemini system to make sure that the activities had been entered as normal onto the live Gemini system.

4.0 Observations

1. A few Users sent in data relating to activities on Gemini before the 9am start time.

2. A few users sent in incorrect versions of the forms.

3. A few users sent in incorrect or incomplete contact details.

4. A user had out of date ANS contact details and did not receive the ANS message.

5. No Faxed information was sent in during the exercise.

6. No data was submitted on the 7th of June 2018 for 3 of the 12 test areas –

- GC10_1 DADNEX
- GC10_3 WDDNEX
- GC11_1 Exit Capacity Trading

7. Few responses were received during the first hour following the initial ANS message advising of the start of the Starburst.

8. By the deadline, 18 Users had submitted data relating to 9 of the 12 test areas. 46% of data submitted related to GE01_1 relating to Nominations/ Bilateral Trades (Non OCM).

5.0 Summary of Exercise Starburst Findings

1. There was a lower level of participation from Users than expected.
• 23% of the Users in Gemini had indicated that they would take part.
• 13.5% of the Users in Gemini actually took part in the exercise.

• It is considered communications issued to encourage participation were sufficient, however 77% of Users were either not contactable or did not confirm they would take part.

2. Data submitted on the day of the Exercise is detailed below:-

Energy Balancing:

• GE01_ 1 Nominations/ Bilateral Trades (Non OCM)	46%
• GE01_2 OCM Trades - Physical, Locational & Title Trades	4%
• GE01_3 DM within day	12.5%
• GC01_4 EU CODE IP Noms/Renoms NTS	8.25%

Entry Capacity:

• GC04_2 DADSEC	2%
• GC04_2 WDDSEC	4%
• GC04_3 DISEC	6.25%
• GC06_1 Entry Capacity trading	2%

Exit Capacity:

• GC10_1 DADNEX	0%
• GC10_2 DONEX	15%
• GC10_3 WDDNEX	0%
• GC11_1 Exit Capacity Trading	0%

3. Errors in data submitted on the day of the Exercise are detailed below:-

Energy Balancing:
4 forms had incorrect or incomplete contact details
3 forms were the incorrect version
2 forms were sent in too early before the exercise officially started

Capacity:
1 form had incorrect request for a future capacity date
1 form had incorrect or incomplete contact details
1 forms was sent in too early before the exercise started

4. Five forms were sent in on the day with no or incorrect contact details. Although in a real contingency National Grid would utilise all other sources of contact details available to them, the Contact Information requested in a Contingency remains the primary source available and is contained within the Code Contingency Document to assist National Grid with accurate and timely communications.

5. National Grid had robust checks in place to identify if duplicate data is sent in via fax and or email – on the day of the exercise National Grid were checking for duplicate data.

6. Users were pleased with confirmation emails from National Grid, acknowledging that data submitted had been received. Feedback was received from Users stating that it would have been good to know if the data submitted was correct on the templates. However in a genuine contingency situation National Grid would be unable to check data submitted was correct.

6.0 Feedback on the exercise

A questionnaire was emailed directly to all the exercise participants to try and capture sufficient qualitative information to understand Users' views of the exercise and their perceptions of the Contingency process. The questionnaire contained 13 questions and a final section for comments. Details of the questions and the responses are captured in Appendix A. For anonymity, any text that identifies an individual or company has been removed.

Questionnaires were completed by 90% of the Users that took part in the exercise. This represented 12.15% of the total number of Users live in Gemini that could have taken part in the exercise.

In relation to the Users that did not take part in the exercise the two main reasons were:

1. Some users indicated that the exercise was not relevant to their company as they did not carry the activities being tested.
2. Some Users chose not to reply to any of the communications relating to this exercise.

Two Users that had initially indicated that they would take part later confirmed that they would not be able to take part.

Feedback from the questionnaire identified that there is a disparity in the level of Users awareness and application of the principles. The majority of Users that replied to the questionnaire found the exercise useful in improving awareness. Some Users found the templates and communication tools fit for purpose but there was feedback requesting changes to the templates used.

Strengths

- Sufficient prior communication of the exercise was given to the industry, although this did not result in a high number of Users that taking part.
- The majority of participants located the supporting documentation on the Gas Governance website.
- The majority thought the communication during the exercise was clear, concise and timely.
- The majority of Users felt the exercise had met the objectives of improving their awareness and application of the Gemini Code Contingency Guidelines.
- The majority of Users agreed that the Process Flow Diagrams were effective.
- The majority of Users agreed that the Gemini Code Contingency Guidelines were straightforward.

Weaknesses

- Some Users had issues with the forms – contact details, incorrect versions

7.0 Recommendations

1. There is an opportunity for improvement in the number of participants in future exercises. Notification via other forums other than the Gas Operational Forum should be explored. Xoserve to investigate how to increase participation in these exercises including views from Gemini users.

2. Users need to ensure that their Operational contacts know where their ANS handsets are and that they are in a state to receive messages. If there is a problem this should be reported and their contact information recorded in the ANS Backup Fax list. It is a User responsibility to make sure their ANS contact details are up to date.

3. The formatting of the exercise proformas needs to be reviewed in terms of contact details required.

4. Users should familiarise themselves with the Gemini Code Contingency Guidelines to reduce the current level of disparity.

5. All Users should be further encouraged to participate fully in future exercises so that the results are more robust and reflective of the industries awareness and readiness for a contingency situation.

6. During the exercise 100% of data submitted by Users was via email. No data that was sent in by fax. The use of faxes in Contingency situations should be reviewed. Not all shippers have access to or simply no longer use fax machines. However it should be noted that that under UNC fax is a formally recognised form of communication where as email is not formally recognised. In addition if a User has lost internet access and is using contingency processes then they will need to use faxes.

8.0 Appendix A – Shipper Feedback Questionnaire

Question 1a - Sufficient prior communication of Exercise Starburst was given via the UK Link Committee and Transmission Work stream.

	Starburst	Nebula	Star
Agree	44.5%	80%	95%
Somewhat Agree	11%	20%	5%
Disagree	44.5%	0%	0%

Question 1b - Sufficient prior communication of Exercise Starburst was given via Xoserve.

	Starburst	Nebula	Star
Agree	56%	94%	N/A
Somewhat Agree	22%	6%	N/A
Disagree	22%	0%	N/A

Question 2 - We were aware of our role and the actions to take prior to Exercise Starburst.

	Starburst	Nebula	Star
Agree	67%	83%	82%
Somewhat Agree	33%	17%	18%
Disagree	0%	0%	0%

Question 3 - Our Company has 24 hour access to ANS.

	Starburst	Nebula	Star
Agree	100%	71%	95%
Disagree	0%	29%	5%

Question 4 – We were able to locate the necessary documents and templates on the Joint Office website.

	Starburst	Nebula	Star
Agree	67%	83%	91%
Somewhat Agree	22%	11%	0%
Disagree	11%	6%	9%

Questions 5 – The communications from NG at the start and end of the exercise via ANS were clear and concise.

	Starburst	Nebula	Star
Agree	45%	63%	68%
Somewhat Agree	33%	23%	27%
Disagree	22%	14%	5%

Question 6a – The process flow diagrams within the Gemini Code Contingency guidelines V3.1 on the National Grid website accurately reflect the roles and activities that need undertaking.
– (search by keyword Contingency on website for this document – in top right hand corner of main website page)

	Starburst	Nebula	Star
Agree	89%	71%	65%
Somewhat Agree	0%	29%	15%
Disagree	11%	0%	20%

Question 6b – The process flow diagrams are effective.

	Starburst	Nebula	Star
Agree	89%	71%	55%
Somewhat Agree	11%	29%	25%
Disagree	0%	0%	20%

Question 7 – The Code Contingency guidelines are straight forward to follow.

	Starburst	Nebula	Star
Agree	78%	66%	50%
Somewhat Agree	22%	34%	45%
Disagree	0%	0%	5%

Question 8 – The templates are easy to complete and submit.

	Starburst	Nebula	Star
Agree	67%	80%	64%
Somewhat Agree	33%	20%	32%
Disagree	0%	0%	5%

Question 9 – There was a query on our data from NG during the exercise.

	Starburst	Nebula	Star
Agree	78%	14%	18%
Disagree	22%	86%	82%

Question 10 – Exercise Starburst met the objective of improving our awareness and application of the Code Contingency guidelines.

	Starburst	Nebula	Star
Agree	67%	69%	73%
Somewhat Agree	22%	28%	22%
Disagree	11%	3%	5%

Question 11 – We are more aware of our role and the actions required to take after completing Exercise Starburst.

	Starburst	Nebula	Star
Agree	45%	60%	68%
Somewhat Agree	33%	23%	27%
Disagree	22%	17%	5%

General comments from Questionnaire respondents:-

1). During the task I submitted a query over how to submit a reduction to flow at an Entry point following a beach swap. I entered the data following the templates available to us in the exercise but questioned how that data should be shown and what information was required, as the data columns in the form I was advised to use didn't seem to match up with the requirements in that instance. The query was never actually finally answered so we are unsure as to whether the way we submitted the data was correct or not. We have our own format document for deemed flow contingency in any event so it's not really an issue. However, if you wanted shippers to strictly only use the templates provided some feedback would be required.

NG response: This query was later addressed and responded to. For gas trades, it is only those performed at the NBP that should be submitted under a contingency event and the form is designed for that purpose.

2). Otherwise the exercise was helpful to remind us of our requirements as a shipper.

3). Please note also: The link provided at 4.4.8 of the Gemini Code Contingency Guidelines for information generic to the industry during contingency does not seem to work. (Link: http://www.nationalgrid.com/uk/Gas/Data)

NG response: Thank you for pointing this out. As a result of the feedback received we are reviewing this document and will ensure links are updated as part of this review process.

4). A very well communicated exercise. It would have been useful to have an email confirmation receipt once data had been submitted to give assurance that it had been received and was correct.

NG Response: We understand why this would be useful, however it may not always be possible for us to confirm receipt of proformas due to the volume received. Our current preference is to only respond to proforma receipt if there is an error or clarification required and will update our contingency documents to make this clear. The exception to this is fax, where a fax receipt is automatically generated.

5).There was no clear communication as to how/when the data forms was to be submitted and neither any receipt that the information had been received by NG. We did not receive any feedback on our data and the questions we had did not get answered either. Overall very disappointing exercise and did not meet the objectives.

NG response: The communication on how/when data forms were to be submitted was included in the ANS messages sent out on the day and also included in the pre-exercise material. We'd like to further understand why you felt these communications were unclear and

will seek to follow this up with you. We do understand why feedback on data would be useful, however it may not always be possible for us to confirm receipt of proformas due to the volume received. Our current preference is to only respond to proforma receipt if there is an error or clarification required and will update our contingency documents to make this clear. The exception to this is fax, where a fax receipt is automatically generated.

6). Exercise started late: 09:18 instead of 09:00.

NG response: We didn't intend to start the exercise at 9 am, but between the hours of 09:00 hrs and 15:00hrs. We will ensure communication on start times is clearer in the future, however we are unlikely to provide an exact start time in future exercises as we believe it's beneficial to test how Users respond to specific communications requesting contingency proformas to be sent in, rather than sending them in anticipation of the exercise being declared.

7). WDDSEC form rejected because it was submitted before the [late] start of the exercise?!

NG response: Please see the response above.

8). NGG's usual contingency form GE01_1 materially different from that issued for the exercise. (Starburst version had an additional column marked 'Counter Party (BA) Code if app.).

NG response: We will be reviewing and updating our contingency proformas in response to this exercise and ensure contingency exercise proformas are identical to those published (aside from they will be clearly labelled as exercise proformas).

9). No feedback to confirm if our forms had been accepted – only if they had been rejected.

NG response: We agree and will ensure this is clearly communicated in our updated contingency documents. Please refer to earlier answers.

10). It would help if the forms on the National Grid website (https://www.nationalgrid.com/uk/gas/capacity) include the form code no.. e.g. '**GE01** Noms Renoms and Gas Trades' was called '**GE01_1** Noms Renoms and Gas Trades'.

NG response: We will consider this as part of our proforma review following this exercise.

11). Our EU Nominations form was rejected even though it contained no material differences between the form generated by our nomination system vs. the Exercise Starburst form?

NG response: We are unable to accept forms unless they are provided in the agreed contingency format.

12). There was only one “receipt confirmation” relating to our form submission received from NG, therefore it was unclear whether the consequent submissions were received well and approved or not acknowledged? The feedback from NG was minimal during the exercise unlike the flow diagram suggests in step 16. Also, as per step 14 there were no queries from NG that we had received the ANS alerts.

NG Response: It may not always be possible for us to confirm receipt of proformas due to the volume received. Our current preference is to only respond to proforma receipt if there is an error or clarification required and will update our contingency documents to make this clear. The exception to this is fax, where a fax receipt is automatically generated. ANS automatically provides a confirmation of receipt. We will update the flow diagram to reflect this.

13). We are still not sure why we did not receive any ANS messages for the exercise even though we were receiving the usual ANS messages as normal.

NG Response: We will investigate this as part of our post exercise review.

14). Not all LSOs received the email communications ahead of time.

Xoserve Response: The distribution list for the Exercise contained multiple contacts including operational contacts for each organisation. Local Security Officers were not necessarily on the distribution list for every organisation as they would usually be responsible for access to systems. We will however add Local Security Officers to the distribution list for the next Exercise.

15). The exercise itself went fine.

16). This is the first time since a very long time that the user-readiness regarding the Gemini contingency process is tested. Overall I believe this is a very important test and would like to thank Xoserve and National Grid for facilitating this. From a shipper perspective we would prefer the Gemini Contingency exercise to take place at least once a year.

NG Response: We agree it is very important to regularly test the contingency process. We will consider increasing the frequency of contingency tests.

17). Overall, I believe this exercise is a very valuable test for both the TSO and shipper community. With the above mentioned feedback, on communication and use of fixed templates, I expect we can have a smoother process next time we run a test or, in case of an actual emergency, have ensured business continuity due to preparedness of all parties involved.