



**Exercise Star
Gemini Code Contingency
8th September 2010**

Results and Findings Report

Approved v 1.0

Executive Summary

Gemini Code Contingency Exercise Star, held on Wednesday 8th September 2010 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.

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 but identified:

- 1 The awareness and application of the Gemini Code Contingency Guidelines was improved for the majority of the users that participated in the exercise.
- 2 From the responses that National Grid received, it was evident that there is a disparity in the level of Shippers' and Traders' awareness of their responsibilities to the exercise and of the steps to take in an incident.
- 3 A large proportion of ANS messages were not responded to and the report which detailed the ANS handset usage indicated that only a third of the messages sent were read.
- 4 There was a lower level of participation from Shippers and Traders than expected which decreased the significance of the findings.
- 5 The means of communication prior to the exercise needs to be expanded to increase the number of Shippers and Traders who take part in future.
- 6 There is scope to improve the usability of the templates used to exchange data.
- 7 There is scope to make the Code Contingency Guidance documentation easier to follow.
- 8 The data files generated from the exercise were fit for purpose.
- 9 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.

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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 26 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.

The first of these biennial exercises was called Exercise Star, and was held on Wednesday 8th September 2010.

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

This was a one day exercise covering a one Gas Day Gemini outage. Users were instructed to take part in the same Gemini activities they had for Gas Day 7th September 2010 as a paper exercise using the contingency pro formas. The exercise took place during normal business hours of 09:00 to 17:00 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 at the May UK Link Committee meeting, via formal notification to meet the 3 month notice period. Industry updates were also provided at the July Gas Operations Forum, the August Transmission work stream and an email was issued in August from the Joint Office of Gas Transporters.

The industry presentations explained that all Shippers and Traders active on the NTS were required to take part in the exercise and that it applied to their daily activities in Gemini. The exercise would have no impact on normal operational activities during Gas Day 8th Sept. This was a paper exercise run alongside normal daily operations. National Grid did not enter any data into Gemini during the test. All communications were prefixed 'Exercise Star'.

This exercise intended to test the daily processes including Energy Balancing actions and daily Entry Capacity auctions.

Energy Balancing:

- GE01 – Nominations & Trade nominations (End Of Day Noms)
- GE01 – Enhanced operations (DM Nominations)
- Market Operator nominations (Title Trades and Physical/Locational Trades)

Short Term Entry Capacity:

- GC04 – Within Day Daily System Entry Capacity (WDDSEC) auction
- GC04 – Daily Interruptible System Entry Capacity (DISEC) auction
- GC06 – Entry Capacity Trading – within day trades only

National Grid excluded the following processes from this first test for the reasons given:

- Long Term Auctions (QSEC, AMSEC and RMTTSEC) these can be delayed or postponed and the DRSEC which is not obligated. These are not applicable for a one day outage.
- Short Term Auction DADSEC, the process for this auction is very similar to the WDDSEC which formed part of the test.
- Constraint Management was considered unlikely in a one day outage.

Communication from National Grid would be via the Active Notification System (ANS) which is a type of pager system used to inform Shippers 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.

For clarity an ANS message was sent on the morning before the exercise commenced which read:

'Exercise Star will be commencing shortly, please note that normal operations are not affected and data for Gas Day the 8th September must still be entered into Gemini. Exercise Star is a communications exercise only.'

3.0 Scenario Outline

The scenario assumed that Shippers and Traders had lost access to Gemini but National Grid and xoserve still had access. This meant users must complete the relevant contingency pro formas and submit them in a timely manner to the correct National Grid recipient, who in an actual Contingency situation would input the data into Gemini.

3.1 Energy Balancing Scenario

Two simulated ANS messages were sent, notifying users that the Gemini System was unavailable and National Grid was invoking Gemini Code Contingency arrangements.

The messages contained instructions for users to email contact details on a contingency pro forma by 10:00, and details of accepted physical trades by 11:00, and await further information.

All the user contact details received by National Grid via emails and faxes were recorded on a template in SharePoint, the central data store.

Another ANS message sent later in the morning advised that the Gemini system was expected to return on Thursday 9th September, and requested that all end of day Noms/Renoms/NBP Physical and Locational Trades for Gas Day 7th September 2010 were emailed on a pro forma by 14:00.

All the Physical Noms received by National Grid via emails and faxes were recorded on an Excel spreadsheet.

An additional simulated ANS message was sent advising users that National Grid was invoking code contingency Enhanced Operation for Nominations and requested all DM nominations for Gas Day 7th September 2010 be emailed by 11:30. It also advised that Shippers would be contacted individually with their NDM position.

Trade data from the Market Operator and Nominations data from users, once collated centrally and checked, was sent to Application Support. In a real contingency situation this data would be data fixed into Gemini.

Once the Demand Attribution had been run National Grid emailed all NDM Shippers, for whom they had contact details, with their NDM positions.

3.2 Entry Capacity Scenario

Two simulated ANS messages were sent requesting users to email WDDSEC auction bids to National Grid on a pro forma by 10:30 and Capacity Trade details by 14:00.

Trades were recorded on an offline system and allocations confirmed via email.

An additional ANS message was sent later requesting all DISEC auction bids for the auction held on Gas Day 7th September 2010. The deadline for bids was 13:00 and allocations were advised via email.

Once National Grid had processed all the received data and Shipper queries had been addressed, the final ANS message was sent advising that the Gemini system was fully restored and National Grid was declaring the end of the Gemini Code Contingency.

4.0 Observations

1 Two weeks before the exercise, National Grid received many queries from different Shippers in response to an update message issued via the Joint Office. These have been categorised into the following three areas of user uncertainty.

- The need for a complete overview of what the Exercise was for and how it will be executed.
- Confusion over the data to use and if the data submitted will actually be input to Gemini.
- Confusion over which pro formas to use and who's responsible for submitting them.

All the answers to these questions were contained in the published Exercise Star Information Pack. However, National Grid was anxious that user uncertainty may impact the normal operational activities on the 8th September. Therefore the pack was modified to include a Question and Answer section at the start of the document to improve the document's usability. Additionally an ANS message was sent out on the 8th September before the exercise commenced, re-emphasising that this was a communications exercise only and that normal operation would not be affected and data for the Gas Day 8th September must still be entered into Gemini.

2 Few responses were received during the first hour following the initial ANS message advising of the start of the exercise and requesting data. Some of the pro formas had been sent in Portable Document Format (PDF) or in a different format to the original form which meant that the data couldn't easily be copied across to SharePoint. An example of a formatting issue was that when copying from a Word template the activity number zeros were lost, so 000001 became 1 in Excel.

If a Shipper ticked both the Entry and Capacity boxes on the Shipper Contact Details form, National Grid recorded the details twice, one for each separate process leading to duplication of effort.

Because of the delayed responses, format issues and duplicate recording, processing the contact details took longer than expected. But due to the low level of responses this didn't adversely affect any other processes or strain resources.

3 Incomplete forms delayed data processing as, in some cases, National Grid needed to contact the originator for clarification, or to ask for missing data.

- The Shipper Short Code was not always filled in
- The Nomination portfolio box was not ticked to indicate the portfolio type
- Several Shippers were not sure what their Service IDs were
- There were instances of data being submitted on the actual Code Contingency Forms and not the Exercise Star forms
- Some emails were sent to the wrong account or sent to more than one email box account. This could lead to duplication of data if processed by a different operator

4 By the deadline, DN Nominations had only been submitted by 10 Shippers. Some additional forms were received after the deadline but in a contingency situation any forms submitted after the deadline will not be processed. Several queries were raised by Shippers on whether they could send one form for both Exit and Entry, and also if DM Nominations had to be submitted on a separate form.

5 National Grid was unable to respond to 20 NDM Shippers with their NDM position as they had not received the Shippers' contact details. After searching for alternative contacts, 2 more were found, which meant that 18 out of the 36 Shippers remained outstanding.

6 National Grid received some Entry Capacity information before the DISEC start time and also received data for a Day-ahead Daily Entry Capacity (DADSEC) auction, although

this hadn't been requested and the DADSEC process was not included in the exercise.

- 7 During the exercise several Shippers and Traders called to advise that their ANS handsets were not working, or that they hadn't received any ANS messages, or they couldn't locate their handsets. In these cases fax numbers were taken and these Shippers were added to the ANS Backup Fax list. There was one instance of a Shipper missing from the Backup Fax list who had previously reported an ANS issue.
- 8 Many telephone queries were received from Shippers asking for clarification on the points mentioned above, which meant that more than one National Grid resource was unavailable to assist with data processing.
- 9 The NDM and DM reports provided to National Grid from Application Support had the same NDM title, and once printed this was misleading. Also two entries on the report were for Shippers that were no longer live. A request was made to Application Support to change the titles on future reports and to investigate the data discrepancy.

5.0 Summary of Exercise Star Findings

- 1 There was a lower level of participation from Shippers and Traders than expected.

Many Shippers and Traders operate through Agencies which are not mutually exclusive; 4 Agencies represent 22% of the total Shippers and Traders live in Gemini. Therefore if a few Agencies are unable or choose not to take part in the exercise then this has a disproportionate effect on the number of participating Shippers and Traders.

- 37% of the potential contact details were received when measured against the total number of Shippers and Traders live in Gemini.
- 56% End Of Day Nominations were received when compared against the total number of End Of Day Nominations entered on the 7th September.
- 39% DN Nominations were received (including 5% received after the deadline) when compared against the total number of DM Nominations from the 7th September.
- 51% of the expected DISEC bids were received.
- 89% of the expected WDDSEC bids were received (including 20% received after the deadline).
- 31% of the expected Trades completed and 63% incomplete Trades were received.

- 2 Many of the End of Day Nominations submitted contained errors. 11% of the total number of nominations received were exceptions, for the following reasons:

- Invalid requested quantity
- Negative requested quantity not allowed
- Service ID and activity combination not found

- 3 A large proportion of sent ANS messages weren't viewed; only 30% of the messages were viewed.

It was recognised that one handset may be used for more than one registered Shipper Short Code, meaning some are surplus to requirement and remain switched off. However this is a troublingly low percentage for what should be the primary means of communication during an incident.

- 4 Other than the details provided by users at the start of the exercise, there was very little contact information available to the National Grid operational staff to assist with communications, particularly for the NDM Shipper positions. 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 The reports provided by Application Support to National Grid should be clearly titled and contain the latest set of data.
A data fix has now been completed to address both of these points.
- 6 National Grid had robust checks in place to identify the pro formas received by more than one email box account which eliminated duplicate data entry. Also any pro formas sent to the wrong email account were forwarded to the correct account in a timely manner.
- 7 Despite formatting issues which created some difficulties with transferring data into SharePoint, National Grid was able to process all the received data within the timescales.
- 8 Efficient call handling was provided by well trained and knowledgeable National Grid staff who assisted all users that raised queries during the exercise.
- 9 The confirmation emails sent by National Grid, acknowledging and validating the data submitted by users, were well received. However not all users knew these were sent and didn't take any actions if none were received.

6.0 Feedback on the exercise

A questionnaire was made available on-line to all the exercise participants to try and capture sufficient qualitative information to understand Shippers' and Traders' 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 36% of the Shippers and Traders that took part in the exercise. This represented 13% of the total number of users live in Gemini. This number of responses does not give a proportional representation of the industry and consideration must be given to the bias of the responses that were only provided by Shippers that participated in the exercise.

Responses relating to communication before the exercise are misleading because they have been provided by people who were aware of the exercise. To address this, telephone calls were made to obtain feedback from Shippers and Traders that didn't take part in the exercise. The two main reasons provided were:

- 1 They didn't have any activity on the 7th so didn't think they needed to send any data.
- 2 The Operational contact was not in on the day or didn't have time.

Feedback from the questionnaire identified that there is a disparity in the level of Shippers' awareness and application of the principles. Some Shippers found the exercise useful in improving awareness but other Shippers were already aware and thought the exercise time consuming. Some Shippers found the templates and communication tools acceptable but others would prefer changes or alternatives.

Strengths

- Users thought sufficient prior communication of the exercise was given to the industry, although this was not supported by the number of users that took part.
- The majority of users located the supporting documentation on the website and thought the instructions were clear.

- 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.

Weaknesses

- Some users thought there were too many ANS messages sent in short succession which caused complications. Also, the ANS messages were not concise enough and were difficult to read, which caused confusion.
- Concerns were raised by some users about the reliability of ANS handsets, which was supported by the number of unread ANS messages identified in the report.
- Several users hadn't found the Process Flow Diagrams and so couldn't comment on their effectiveness. However those that had used them agreed they were effective.
- Some users didn't find the Gemini Code Contingency Guidelines straightforward and would prefer clearer instructions.
- Some users had issues with the pro formas, mainly formatting.

7.0 Recommendations

- 1 There is an opportunity for improvement in the number of participants in future exercises. This may be addressed by direct communication with Shipper and Trader contacts in addition to the general emails and presentations at the relevant Industry Forums.
- 2 Shippers and Traders 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.
- 3 More time should be allowed between the deadlines in future exercises to allow for any delay in the ANS messages received by Shippers and give them time to respond.
- 4 National Grid's system for recording the details provided on the pro formas should be adapted to reduce the effort of inputting duplicate information. The process for recording the contact details is currently time consuming and will benefit from a review to identify efficiencies.
- 5 The usability of the Exercise pack can be improved to address the main concerns and questions raised by Shippers and Traders.
 - The pack will benefit from being more accessible from National Grid's or the Joint Office's website.
 - Split the pack into several clearly addressed documents;
 - Instructions document.
 - Q&A document to emphasis the main Shipper and Trader queries.
 - A document for the pro formas.
 - A document to contain the Process Flow Diagrams, which Shippers currently struggle to locate.
 - The pro formas need to be amended to state clearly what information they require.
 - The format of the exercise pro formas should be the same as the actual contingency pro formas and text boxes must be large enough for the text to be readable.
- 6 Shippers and Traders should familiarise themselves with the Gemini Code Contingency Guidelines to reduce the current level of disparity.
- 7 All users should participate fully in future exercises so that the results are more robust and reflective of the industries awareness and readiness for a contingency situation.

8.0 Appendix A – Shipper Feedback Questionnaire

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

- 95% agreed with this statement
- 5% somewhat agreed.

Additional comments;

- All information required was given in good time via acceptable means.

Suggestions on how else Shippers would expect to receive prior notification of the exercise;

- Email direct to certain named contacts or the Emergency Contact point within each company.

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

- 82% agreed with this statement
- 18% somewhat agreed.

Additional comments;

- All information required given in guideline files.
- Clearly explained at Ops Forum.
- We had to speak to Grid in advance to find out that we would be using actual data for 7th Sept.

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

- 95% answered Yes
- 5% answered No

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

- 91% located the documentation without contacting NG, Joint Office or xoserve
- 9% located the documentation after contacting NG, Joint Office or xoserve

Questions 5a – The communications from NG during the exercise were clear and concise.

- 68% agreed with this statement
- 27% somewhat agreed
- 5% disagreed

Additional comments;

- I thought the sending of so many ANS messages in short period of time was unrealistic and made our role more confusing and complicated than it needed to be.
- Needed assistance in filling out the forms which I rec'd from NG.
- All communication was clear and queries were answered in a timely fashion.
- All communications were prefixed 'Exercise Star' allowing us to easily establish any communications made to us.
- More concise ANS messages would be quicker to read and decipher.

Questions 5b – The communications from NG during the exercise were timely.

- 82% agreed with this statement
- 14% somewhat agreed
- 5% disagreed

Additional comments;

- Would have been better if the messages were spaced out better.
- All initial ANS messages were received at 10:13am, an hour after they were sent, with first deadline of 10am already past. No ANS messages were posted on the Prevailing View either.
- All replies/requests were made in a timely manner.

Question 6a – The process flow diagrams accurately reflect the roles and activities that need undertaking.

- 65% agreed with this statement
- 15% somewhat agreed
- 15% somewhat disagreed
- 5% disagreed

Additional comments;

- I have not seen these diagrams? Where are they saved, as information seems to be scattered over National Grid website and the Joint Office website.
- The exercise effectively reflected actions that are required to be taken during actual emergencies.
- I'm not sure what you are referring to here as I have seen no flow diagrams.

Question 6b – The process flow diagrams are effective.

- 55% agreed with this statement
- 25% somewhat agreed
- 15% somewhat disagreed
- 5% disagreed

Additional comments as above for 6a.

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

- 50% agreed with this statement
- 45% somewhat agreed
- 5% somewhat disagreed

Additional comments;

- Maybe they should identify what type of user you are on the system.
- Could be slightly clearer instruction wise in information required on some forms.
- Could be a bit shorter.
- I didn't use them, I relied on the Exercise Star pack which was sent out.
- All guidelines are clear and concise and were easily communicated to other relative members of the department.

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

- 64% agreed with this statement
- 32% somewhat agreed
- 5% somewhat disagreed

Additional comments;

- There are a few minor formatting issues that slow things down, mainly regarding font and box sizing.
- Too much formatting on Excel templates. Had to reformat most so I could cut and paste position from our own systems.
- Some of the forms have details which aren't applicable.
- Some of the templates, it was not clear exactly what information was required, namely GE01_2:Physical was pertaining to APX trades.

- Once we downloaded the forms into Word, they all ended up in one document, with page breaks all in wrong places. Also we had to add extra rows manually. And on GC04_2, we couldn't expand the Shipper Short BA box to make our BA visible to read.
- All templates were simple and straight forward to complete.
- Hadn't realised that we could enter both entries and exits on the same nomination form. Have previously sent individual forms.

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

- 82% didn't receive a query
- 18% received one query from NG regarding their submitted data

Additional comments;

- Requesting template in Excel instead of pdf.
- One query was made during the exercise regarding filling out a form.

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

- 73% agreed with this statement
- 22% somewhat agreed
- 5% disagreed

Additional comments;

- We feel we were fully aware of what is expected before the exercise.
- The exercise ensured that our procedures are in order and guidelines are adhered to at all times.
- Our Manager is very proficient in Gemini and the requirements in a contingency.
- Exercises are useful for those of us on shift who do not get the opportunity (thankfully) of operating in contingency mode in earnest.

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

- 68% agreed with this statement
- 27% somewhat agreed
- 5% disagreed

Additional comments;

- Shift Controllers feel that they already satisfactorily understand the actions needed.
- The exercise helped all involved to reaffirm actions needed to be taken in such a circumstance.

General comments;

- Generally from this shippers perspective the exercise was a success but I would always advocate a continuous review of these types of exercises as businesses are always evolving.
- Exercise went smoothly and there are no improvements required to be made.
- I feel a more straightforward set of instructions on how to complete these forms would be welcome. There is a lot of terminology and a lot of what we do on Gemini is automated. When you have to do it manually for the first time in years it can be confusing.
- Could be shorter.
- Perhaps have a continuation form, to be used where Shippers have more data rows than will fit on any of the Pro formas.

- Make more accessible to the market, not just a link on the UNC related documents under Other Documents.
- An improved ANS handset would be a definite improvement, current model outdated and small font hard to read.
- It was good to receive confirmation emails back from National Grid, validating our data and acknowledging receipt thereof. This gave us the opportunity to ensure that our Operations team all have sufficient knowledge & training.
- In a real situation only using the ANS to request information may be a point of failure if the ANS at a particular company is not working for some reason. Would not a corresponding Email to the emergency address held by NG be used as well?
- Our controllers did feel that the exercise was very time consuming, given that they already have first hand experience of dealing manually with a Gemini failure. We fully understand that procedures are only robust if tested, however.
- I have just received a delivery failure message dated 15/9/10, saying that our Exercise Star data submission email was not delivered, but had no contact during the exercise indicating that Grid were still waiting for our data to be submitted.
- Publish on the website under Operational Information, even if a link to the actual documents on the JOGT website, so that easily accessible in all circumstances, maybe entitle link GEMINI contingency documents.
- I sent the Pro formas to National Grid from my personal login - however the contact details on all the forms were for our generic login. These details were not actioned by grid - who replied to my personal login and not the one stated on the form.
- Effective exercise which helped to refresh staff knowledge of procedures and guidelines involved in the system.