

**UNITED KINGDOM ATOMIC ENERGY AUTHORITY**  
**Minutes of the 1<sup>st</sup> Board Meeting in 2018**

**Date:** 14 March 2018

**Location:** Bickerton Room, E6  
Culham Science Centre

**Members present:**

Roger Cashmore, Chair  
Ian Chapman  
Norman Harrison  
Jim Hutchins  
Chris Theobald

**In attendance:**

Adam Baker (BEIS)  
Rob Buckingham  
Martin Cox  
David Martin  
Maya Riddle (sec)  
Catherine Pridham  
Alli Brown - Item 6-7

**Apologies:**

Becca Holyhead (Women  
Onboard)

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## **1 Chairman's Opening Remarks**

- 1.1 Roger Cashmore said that this was the first meeting without Peter Jones and Keith Burnett as non-executives directors (NEDs). There was Ministerial approval for three new NEDs and he hoped to welcome them at the next board meeting.
- 1.2 Jim Hutchins had agreed to be temporary chair of the Audit Committee and Peter Jones had agreed to remain as an expert consultant to ensure that the Board had accountancy expertise and to provide a hand-over to his successor.
- 1.3 Adam Baker was now our representative from BEIS at Board meetings.
- 1.4 After the formal meeting there would be a visit to MAST-U. The Board would also get the opportunity to meet the MAST-U team and hear from Andrew Kirk.
- 1.5 New for 2018 was a regular slot for the Chief Operating Officer (COO) to update the Board on resourcing and on major projects.

## **2 Minutes of the 5 December 2017 meeting**

- 2.1 The Board approved the minutes of the Board meeting on 5 December 2017 and the key actions were reviewed.

## **3 Report from sub-committees**

### **13<sup>th</sup> March Audit Committee**

- 3.1 Jim Hutchins informed members of key points from the previous day's meeting, which included:
  - The audit report had highlighted concern over the financial audit, however, the Committee took comfort in the good progress that had been made. There was also concern over the audit of maintenance of equipment and the Committee sought assurance that the plan was being taken forward with appropriate priority;
  - The audit plan for 2018/19 was approved;
  - The draft governance statement was discussed; and
  - A fraud update had been taken.

### **13<sup>th</sup> March Remuneration Committee**

- 3.2 Norman Harrison informed members of key points from the previous day's meeting, which included:
  - The pay proposal for senior executives and objectives for 2018/19 had been approved; and
  - The Secretary had provided an update on the recruitment campaign for the UKAEA chair. The post was being re-advertised to ensure sufficient diversity of candidates. The plan was to shortlist in early April.

### **13<sup>th</sup> March BAC**

- 3.3 Chris Theobald informed members that there had been conference call to have an interim catch up with members of the Board Assurance Committee.

#### **4 CEO's Report,**

- 4.1 Ian Chapman passed around a letter that he proposed to send to the minister and sought comments on this.
- 4.2 He informed members that the regulation to allow an extension of the JET operating contract had gone to the EU council and the only objection related to the carry over of funds. However, the EU Parliament said it wanted the council to wait until it could offer an opinion.
- 4.3 He had prepared a paper for BEIS on a range of options for UK-US collaborations. Sharon Ellis was going to visit Princeton.
- 4.4 A sponsoring board for the National Fusion Technology Platform (NFTP) had been set up including government and industry representatives. The first meeting had been held and had agreed the NFTP plan. Colin Walter, ex-BNFL and AMRC, had been recruited as a new director and would be starting in April. We had also recruited a head for H3AT and would be recruiting a new Business and Innovations Director. ITER had expressed an interest in the facilities and the NIA had agreed to set up a fusion working group.
- 4.5 MIT had spun out a new company called Commonwealth Fusion Systems. The first three years of its programme would be on high temperature magnet design.
- 4.6 General Fusion seemed increasingly keen about coming to the UK.
- 4.7 Rob Buckingham said that it was beneficial for fusion to have different organisations helping to make technical steps forward.
- 4.8 Ian Chapman informed members that we were in discussion with BEIS about funding the UK JET host contribution and MAST-U directly, rather than these coming out of the EPSRC fusion research grant.
- 4.9 Adam Baker said that BEIS funded operation of STFC facilities, so direct funding would make sense.
- 4.10 Chris Theobald asked about the Exhaust Detritium System (EDS) and Ian responded that it was not technically risky, more an issue of timescales. The supplier had the capacity and we had someone on the ground in Canada. We expected phased delivery starting in April and we were putting in place an intermediate system to allow testing. The plan was to start tritium experiment in July 2019.
- 4.11 Norman Harrison said that he had had an opportunity to look at the Materials Detritiation Facility (MDF) and was very impressed with the capability.
- 4.12 The Board noted the report.

*Mark Shannon joined the meeting*

#### **5 COO's Update**

- 5.1 David Martin handed out a draft of prototype of a COO's report and key points included:
  - There had been a pause for safety following an incident where a contractor had fallen off a ladder. The HSE had investigated and was taking no further action but had advised us to take lessons learnt;
  - A new Programmes & Major Project Committee was starting up in March, which would report into the Executive;

- UKAEA currently had around 110 vacancies and on boarding took around 100 days, which was an improvement as it used to be 180 days. Resourcing shortages were putting a stress on the organisations and we needed a structured approach to recruitment ahead of need;
  - We were undertaking a skills and competency mapping exercise; and
  - We were undertaking actions to improve behavioural safety and to ensure that we had a cohort of properly trained supervisors.
- 5.2 Chris Theobald said that he had asked UKAEA's safety manager to look at the data. There was not any evidence of the accident rate rising. The view was that the safety culture and the leadership were fine, but was not always flowing down the organisation. He would provide an update at the July Board meeting after the June BAC meeting.
- 5.3 Rob Buckingham supported over-recruitment in key areas, particularly as with attrition we would be feeding highly skilled people into the supply chain.
- 5.4 David Martin took members through the project dashboards:
- JET – there was a leak on one of the columns, which was delaying the start of the next campaign;
  - DTE2 – there was better control of the project. The main risks related to resources and availability of the EDS;
  - EDS – the procurement had been approved and an independent review had been largely supportive;
  - ESS – the tenders were coming in much higher than the original market testing. The main reason was that since budget had been fixed the radiation/dose levels had gone up by ten and therefore industry couldn't use the same equipment. It was being escalated up through STFC;
  - MRF – progress had suffered due to resource being diverted to MAST-U. There was uncertainty was around NNUF funding; and
  - NFTP – the main risk was about cost of the buildings.
- 5.5 Mark Shannon said that he had developed a new Dashboard format.
- 5.6 Adam Baker informed members that the NNUF Business case had been updated and was being reviewed by BEIS.
- 5.7 The Board noted the update.

*Mark Shannon left and Alli Brown joined the meeting*

## **6 P10 Financial Report**

- 6.1 Alli Brown provided brief highlights from the report.
- 6.2 Peter Jones commended the detail and coverage in the report.
- 6.3 The Board noted the financial position at the end of period 10.

## **7 Budget for 2018/19**

7.1 Alli Brown highlighted key points on the budget for 2018/19 including:

- The JET figure assumed that we would have a JET operations contract in 2019;
- The EPSRC figure assumed direct funding from BEIS to cover the MAST-U and the UK's JET host contribution;
- The NFTP budget was based on a scenario where we would get additional funding and we would manage spend on through a risk-based approach;
- MRF included an increase in support as we had not assumed recurrent funding from NNUF;
- Business Development now showed a more positive position, with overhead shared with NFTP and the Technical Consultancy area making a profit;
- The paper provided an indication of prospective funding areas, which weren't included in the budget and might be potential areas of upside;
- Overheads were higher than last year, as the organisation growing. The main increases were in HR, finance & procurement and in expanding the number of graduate and apprentices; and
- Capital spend included a new modular building and a pavilion.

7.2 Members discussed the budget and the following points were made:

- While RACE was still being subsidised, it was leveraging far more in jobs & growth in industry;
- MRF was about to go into radioactive operations and had a pipeline of work, including from several universities who had recently won grants.
- The overhead increase seems sensible given the organisation was rapidly growing;
- The modular building would provide an overflow for RACE and the ability to decant people; and
- We were working on a transport strategy including car parking.

7.3 Chris Theobald said as part of the tracking for NFTP it would be useful to monitor the impact on UK plc.

7.4 Ian Chapman sought confirmation that the Board was comfortable with operating at risk relating to the JET contract and NFTP, noting that we expected these to be resolved, and members confirmed that they were content with the assumptions in the budget.

7.5 The Board approved budget.

*Alli Brown left the meeting*

## **8 Corporate Performance Measure for 2018/19**

8.1 Maya Riddle said that we took a balanced score-card approach to the corporate performance measures. The proposed set of measures for 2018/19 were similar to 2017/18 but had additional metrics on safety and on diversity.

8.2 Members agreed the distribution of allocations:

- 13% on Safety & Assurance measures but with 4% of this on completion of audit actions;
- 56% on Science & Technology measures;
- 15% on Technology Growth; and
- 16 % on Enablers.

8.3 The Board approved the measures, subject to the above point.

## **9 Draft Mission & Goals 2018/19 document**

9.1 Ian Chapman said that the document presented a progression over the previous year and included an introduction from himself and more pertinent deliverables for the corporate goals. A glossy version would be published.

9.2 Peter Jones said that it made good reading.

9.3 Adam Baker said that it was a useful document and suggested adding a few more number to give it more weight and credibility

9.4 The Board noted the development of the document.

## **10 Board performance review process**

10.1 Maya Riddle proposed a self-assessment performance review for the Board and its sub-committees. The Board questionnaire had been shortened following feedback from last year and the results from all the reviews would be reported to the July Board meeting.

10.2 The Board approved the process.

## **11 Any Other Business:**

11.1 Chris Theobald asked for guidance on GDPR to be provided the non-executives.

11.2 The next meeting was on Tuesday 8 May 2018

*Andrew Kirk, Nanna Heiberg and Joe Milnes joined the meeting*

## **12 MAST-Upgrade**

12.1 Members undertook a tour of the MAST-U facility.

12.2 Andrew Kirk provided a presentation on MAST-U. Key points included:

- It was a unique device and would allow us to study alternative divertor configurations, which was essential research for future power plants. There was considerable interest from fusion labs, including from EUROfusion and US labs. The US Department of Energy was funding work on spherical tokamak research;
- Last year we had received additional funding for MAST-U enhancements to provide the full scope, as originally planned;
- The size of the operations team needed to increase as the machine was more complex than its predecessor;

- As previously reported to the Board, hydrocarbons contamination had been discovered on some of the tiles. R&D had provided a way to clean these via a glow discharge, interim bake, vent and second bake; and
- A rigorous handover process was taking place as we transitioned from the machine build phase to commissioning and restart. The first plasma operations were expected December 2018 through to February 2019, which would undertake testing and initial physics. There would be a 3-month scientific campaign in Spring 2019. Following campaigns would be 6-month durations.

12.3 Chris Theobald said that the team had done a fantastic job and that the build involved something in the order of 150,000 parts and tolerances in mm.

12.4 Ian Chapman said that the spherical tokamak had a more compact design therefore was cheaper to build, but we needed to deal with the heat loads, which was why the Super-X divertor was important.

**Secretary** Maya Riddle

**Chair** Roger Cashmore