Design Services Alliance
Sellafield Ltd AXIOM Progressive ALLIANCE

NEWS BULLETIN November 2020

A regular update on DSA projects and people

DSA helps rack up a £2 billion saving for the taxpayer

Support from the DSA played a key role in the creation of an innovative storage system that has been hailed as a £2bn cost-saver for the taxpayer. The 'Hybrid 1 63 Can Rack' (63c Rack), devised by a Site Management Project Office integrated team, makes the most of limited space in the Thorp plant pond where spent fuel from the UK's seven Advanced Gas-cooled Reactor (AGR) stations is kept. With more than three times the capacity of previous underwater storage compartments, it is crucial to support accelerated bulk defuelling of the stations as they come to the end of their operational lives over the next decade.

Two years ago, AXIOM's Michael Peagram was tasked with guiding manufacturers through the

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The first Hybrid 1 63 Can Rack pictured at Bendalls Engineering Ltd

Financial update

At end of period 4	
DSA spend during 2020/21	£64.1m
Cashable benefits*	£1,248,711
Non-cashable benefits*	£2,874,284
Schedule benefits*	31.4 months

Health and safety

Hours without a lost-time incident	
AXIOM	6,709,100
Progressive	5,749,164
Total	12,458,264

*Approved and draft

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Virtual coffee afternoon for DSA Supply Chain Forum

The DSA usually holds two Supply Chain Forum meetings per year, which are a chance for people from supply chain companies to come together and discuss matters of mutual interest.
Developments at the Sellafield site, new opportunities emerging as part of the DSA's workload and sharing learning from key projects are the prime areas for information sharing.
In normal times, forum meetings are held alternately in West Cumbria and Warrington, but a face-to-face gathering has not been possible since March 2020 under current COVID-19 restrictions.
Meanwhile, the 'new normal' of working practices during the pandemic means that people are missing out on other networking opportunities such as running into each other on site at Sellafield or around Birchwood Park, or at industry events.
So Axiom and Progressive jointly decided that the time had come to set up a virtual event to maintain contact with the supply chain.
A number of options for virtual facilitation were investigated, but the most accessible option was deemed to be Microsoft Teams, which has become a familiar means of communication for many in recent months.
At the event on November 4, ten suppliers in total attended, with several breakout sessions to focus on key topics of interest to those present.
The main topic of conversation centred around forward planning and what is on the horizon for the supply chain over the next 12 months.
Other discussions were held regarding site access and transport and fortunately there were suppliers on the call who have a permanent site presence and who were therefore able to confirm details of the new procedures.
Attendees also discussed the ongoing impact of tightened restrictions on the use of IR35, and the ability to challenge a Status Determination Statement, a key part of the process to assess a contractor's employment.
Passing on of learning-from-experience from each major project was also raised, as it was felt this is often missed and under-utilised.
The next Supply Chain Forum is due to be held in February 2021 and it is still to be determined whether this will be a virtual or face-to-face meeting.

New rack system is key to accelerated defuelling of AGRs

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complex task of complying with the project's stringent drawing requirements. Dimensional inspection and verification were crucial to ensure that the parts would fit together and that the 63c Rack complied with all nuclear safety case claims.
"The finished product had to be verified using geometric dimensioning and tolerancing to BS 8888. It is very difficult to find people who have this skillset as well as manufacturing and inspection experience," said Michael who, as Lead Mechanical Engineer, reports to Engineering Manager Graham Houghton.
The DSA team, working alongside Sellafield Ltd's Inspection & Certification Group, brought in design resources with a particular set of skills from James Fisher Nuclear and PWHytek to work collaboratively with the manufacturers to verify that all the requirements of the drawings had been met. This full-time support will continue through the entire manufacturing stage for the remaining Hybrid 1 63c Racks. Michael added: "It has taken about two years to get manufacturing up and running. All the hard work by SMPrO, the DSA, and the manufacturers has successfully resulted in a very important innovation for Sellafield."
The first 63c Rack has now been installed after manufacturing and installation work by West Cumberland Engineering Ltd, Bendalls Engineering Ltd and TEAM Industrial Services.
Andrew Pringle, AGR Operating Programme Manager for Sellafield Ltd, hailed the successful project as "a great example of collaboration".
The new racks are a key part of Sellafield Ltd's work to enable the AGR stations to be defuelled in 3.5 years rather than eight. This would reduce decommissioning costs by about £2bn.

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My Perspective – Martin Lyons

Martin Lyons is bound to bring some fresh thinking to his new job as AXIOM programme director. That's because he's never worked at Sellafield before, despite extensive experience in many different parts of the nuclear industry.

A project director with Assystem, Martin's most recent assignment was on secondment as head of operations with a joint venture in Uzbekistan, working with international and local teams, to deliver design and engineering services to electro-technical projects to upgrade the country's transmission and distribution infrastructure. Before that, he was working on Hinkley Point C as part of the Quality Delivery Programme.

His earlier career included work on new build projects in Poland and for Nugen at Moorside, as well as spending time at AWE and on decommissioning and delicensing of pharmaceutical sites.

Martin took over from Mike Houghton late last month and his top priority is to build on the success achieved by the DSA so far. "A lot of good work and effort has been put in by Mike and the team to deliver design services to a very high standard and to build some great relationships both within AXIOM and the DSA and with Sellafield Ltd," he says.

"One of the DSA's strengths is that it brings new thinking and ways of working that can be applied from other parts of the nuclear industry."

Martin believes this will help to implement the recommendations of the Nichols Report, which concluded that Sellafield Ltd should keep the DSA into its third five-year tranche as long as it had a plan to become more efficient and to work more effectively with other frameworks.

"Nichols pointed out that Sellafield Ltd would lose a lot of value in the short term if it tried to replace the DSA because it would lose the tacit knowledge that has been built up by the DSA partners.

"I see the opportunity for us to increase our value add by operating more like 'One DSA', so that we work together in a more integrated and efficient manner for the benefit of the customer."

Although there is a forecast decline in the DSA's volume of work because of transitioning of major projects to Programme and Project Partners, Martin believes there are also opportunities for growth.

"We need to demonstrate the value that the DSA brings by virtue of having an established supply chain, tacit knowledge reach back and an ability to apply innovative solutions. All of these things bring benefits to Sellafield Ltd.

"We are already doing pilot schemes to work more closely with other frameworks who are responsible for implementation. This will help our customers because they won't need to devote as much resource to closely managing the interface between design and implementation and design-implementation interface issues are minimised.

"Early involvement with the people who are going to do the manufacturing and construction is important for any engineering design project because it's up-front when you have the most opportunity to identify opportunity, remove costs, and leverage greatest influence with minimal cost."

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External audit praises development of collaborative working

An external audit has praised Sellafield Ltd's standard of collaborative working, saying it has contributed to the site's resilience during the COVID-19 pandemic.

The Sellafield Product and Residue Store Retreatment Plant (SRP) project, where design work is led by a DSA integrated team, was one of those under the microscope when Lloyds Register Quality Assurance carried out a SO44001 surveillance audit earlier this month.

Sellafield Ltd's audit was successful, with no major or minor non-conformities and no actions from January carried forward.

Stephen Scott, Collaborative Working Programme Lead, said: "The feedback shared by the assessor is that no non-conformances were identified during the assessment and there were no previous findings carried forward from the last visit.

"This is a fantastic outcome and a true testimony to the support and participation of all those involved this week and how we continue to demonstrate Sustainable Collaborative Working."

Another point which was brought out by the audit was that development of collaborative working over the past two years have proved crucial in helping Sellafield Ltd to cope with the COVID-19 lockdown and to successfully restart project work on site.

Year-to-date KPI stats

Work to supply chain	Work to SMEs
26%	11%
Hours in education	**Customer feedback score**
1392	99%

Not a fan of original scope

A closer look at the requirements for the Thorp cooling tower refurbishment project has resulted in a cost benefit of nearly £115,000.

Initially, the plan was to replace the cooling tower fan gearbox and motor under a design and build contract by the Decommissioning Design Partnership.

However, when Sarah Reid, DSA Area Engineering Manager, became involved, she worked with the system engineer to produce a project requirement specification.

Sarah adds: "The original scope included replacement of the fan gearbox and motor to improve performance.

"As a result of understanding the scope and requirements, it was agreed that the fan items could be refurbished instead.

"This underlines the need for better requirements management to ensure that scope of work is aligned to agreed requirements so that we can avoid unnecessary work, with delivery strategies captured in a project execution plan."

Leaders thank SRP team

Leaders of the Sellafield (Product and Residue Store) Retreatment Plant (SRP) project have thanked their team members for recent achievements.

These include a milestone of two million hours worked without a lost-time incident or strike; and securing approval from the crane panel for the use of tower cranes 2 and 3.

More than 170 employees attended the Teams call and heard from Special Nuclear Materials customer James Millington and Steve Harnwell, Head of Projects.

Thanks to maintaining safe delivery throughout the COVID-19 pandemic, the project was 21% complete at the time the meeting took place in late October. Design work, carried out by a DSA integrated team, was 90% complete.

The new plant will treat and repackage nuclear material into new 100-year cans for safe and secure transfer into the Sellafield Product and Residue Store.

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Apprentices gain skills and confidence from work with DSA

As well as providing career opportunities for qualified professionals, DSA partners give budding engineers a superb grounding through their apprenticeship schemes.

Ben Ikin, from Stockport, joined Cavendish Nuclear as a mechanical design apprentice after his A-levels.

Now, aged 22, he has completed an HNC and, through the DSA, has worked on MSSS SEP 3, and then the WAGR Post-Irradiation Examination facility (WAGR PIE), under the wider Remediation team.

“The Silo-Emptying Plant has a lot of specialist systems, so it was very interesting to be involved in different aspects,” said Ben. “And working on the concept stage of the project to remove intermediate-level waste from WAGR PIE, it has been great to learn how the team develops fit-for-purpose solutions and presents them to stakeholders. Working with the DSA has been a really valuable part of my training, especially because it has enabled me to apply academic knowledge to the design work that I’m part of, which has really consolidated my learning. I would say to anyone who gets a chance to work with the DSA: ‘Go for it!’

Alice Smith a civil engineering degree apprentice with Mott MacDonald, is working on the SIXEP Continuity Plant (SCP) project alongside studying for her BEng.

Alice says: “Working on DSA projects has benefitted me because working with such an experienced multi-disciplinary team has allowed my knowledge and skills to develop at a greater rate than I imagined they would.

“My design work has developed greatly during the past 18 months thanks to being part of the steelwork team, where I have been learning from the vast experience of the senior engineers. I have enjoyed working on my own design calculations for the vessel support steelwork as well as designing runway beams and moving onto working on the pipe support encast plates, allowing me the opportunity to apply my knowledge in a practical setting.

“This development has allowed me to perform to a very high standard in my university modules which in turn helps with my understanding of my work in the office.”

Bethany Smith, a CE&I Designer with Jacobs, who is studying for her BEng in electrical engineering, says that working on the Security and Resilience Project with the DSA has broadened her knowledge and enabled her to develop additional competencies.

“It has also ensured that I have been able to go on a number of site visits to visualise what the project actually is. It has enabled me to work with a variety of people and different stakeholders and is helping me to build up my knowledge,” she adds.

Pictured from top: Ben Ikin, Bethany Smith and Alice Smith

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New Knowledge Hubs are the way to click on useful info

DSA Progressive and Morson Projects have introduced Knowledge Hubs for easier access to information on the Magnox Swarf Storage Silo and the Pile Fuel Cladding silo.

The hubs are built and outputted in a way that allows access from desktop PCs and handheld devices. As the hubs' architecture is essentially a database of links to existing information, they do not require much data storage.

Hubs can be built for entire facilities, but can just as easily provide information on a single bit of equipment, such as a crane.

By utilising BIM models and Autocad files, rendered to provide a realistic representation of equipment, individuals can familiarise themselves with layouts, job locations and components at their fingertips.

Hubs can help with:

• **Refresher Training** – Individuals can re-familiarise themselves on systems they may not have come across since training and watch videos of low frequency/high risk tasks.

• **Mobility of Workforce** – Hubs can be tailored for specific facilities and equipment but with the same basic layout and navigation, so they can be used by the entire workforce without any need for lengthy training.

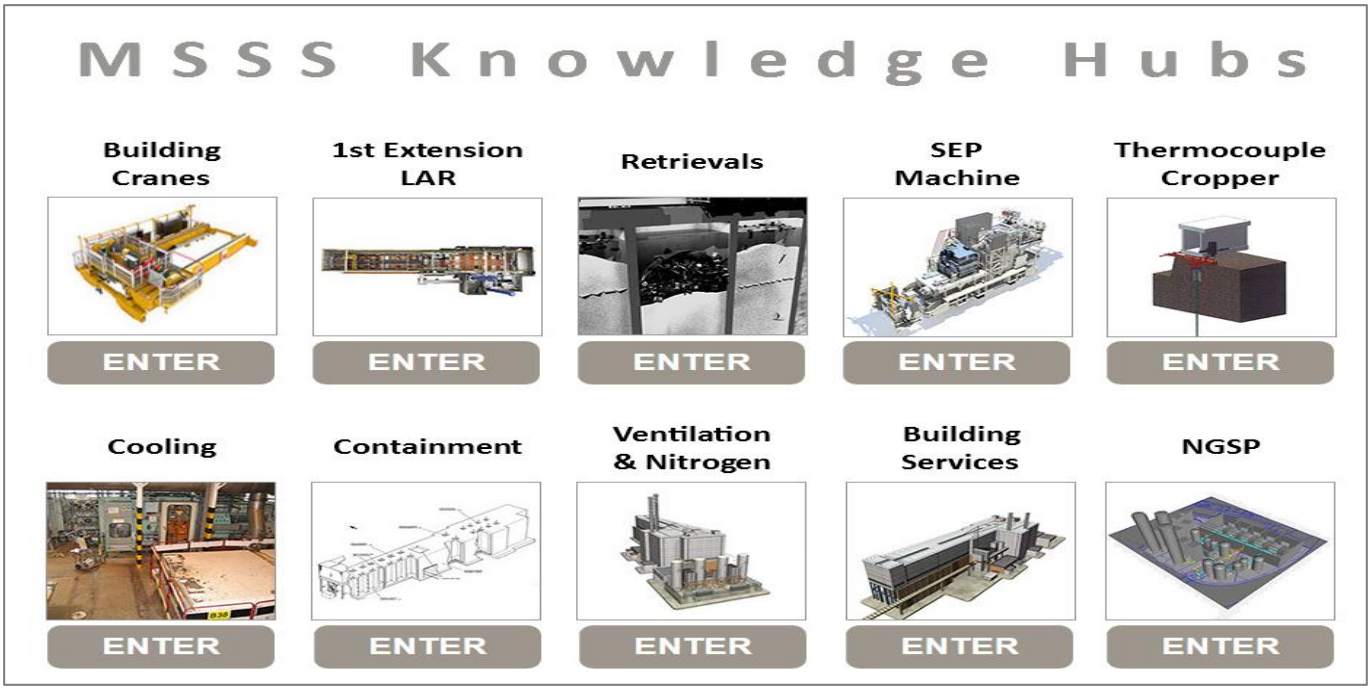
• **Capturing LFE** – Posted images and videos appear live on the hubs within minutes, retaining knowledge, capturing the right and wrong way to perform tasks, and feeding the hub database

• **Access to documentation** – Hyperlinks to documents such as OI/MI/Risk Assessments will ONLY access the latest version of a document. If the document has been amended or moved, the user CANNOT access out of date information but will be directed to a location where all documents can be interrogated. Once flagged up, the hyperlink can be updated in a matter of minutes and the NEW version made available instantly.

• **Decision Tree/Maintenance Flow Diagrams** – By using the hubs to present decision trees electronically, the user is only presented with a single decision at a time. With complex processes, this can make problem solving easier.

• **Job specific information to aid retrievals** – We are developing hubs which are tailored specifically to aid with decision making during the waste retrievals process, aiding operators with waste Identification and determining whether or not a skip is safe to export. Regulators have been presented with the hub and given confidence in the way in which it supports operations.

Simon Mattinson, lead developer of the hubs for Morson Projects, said: "These tools empower people, encouraging individuals to investigate further rather than just shout for a supervisor. Maintainers aren't just pointed in the direction of a faulty pump but provided context as to the importance of that component in an overall system."



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