

Schedule report description

The ESS BEER experimental cave

There is no significant impact on schedule when negotiated the technical solution. In a meantime we experienced an increase on ESS QA and H&S requirements and therefore we assume more time to be spent when preparing the installation (IRR phase) and installation itself. On the other hand, our company install currently 3 caves in parallel and have 2 other cave projects in manufacture / design phase. These experiences give us a confidence to deliver the BEER project on time.

Therefore, hereunder we present the brief schedule report and comments as a part of the preliminary bid phase of the BEER experimental Cave&Hutch tender, including the confirmation of the boundary conditions to deliver fully the project within 17months after contract formal signature.

Our experience gained especially during ESS contracted works on:

- BIFROST cave detailed design, manufacture and delivery (completed in 10/2020)
- DREAM cave detailed design, manufacture and delivery (completed in 11/2022)
- SKADI Sample cave design (installation on site ongoing)
- ESTIA cave design (installation on site ongoing)
- MAGIC cave design (in manufacture phase, project to be finished in 2024)
- TEST BEAMLIN (TBL) cave detailed design, manufacture and delivery (SAT in progress)
- CSPEC Cave&hutch detail design, manufacture and delivery (design ongoing. To be delivered in 2024)
- several ESS control hutches (for FREIA & LOKI completed as well as for ODIN & DREAM. Ongoing for CSPEC Hutch)

among other radiation shielding projects referenced in relevant part of the quotation, has been largely utilized too.

Our experience shows that a for design & build projects like ESS BEER cave&hutch the design phase should not be too much condensed and it strongly pays-off the allow for appropriate time for conceptual work, development of details, approval process and manufacturing preparations. We can guarantee to deliver to the required 17 months tight schedule, but will need to be very strict towards Client to manage proper cooperation, esp. swift decision process (decisions to be made directly during progress meetings not to cause delays) and pushing on ESS to provide instant feedback, which will not be changed later. Details might be discussed and agreed at negotiation meeting. Based on the expected contract signature, the preliminary schedule should be prepared. When KOM, the detailed schedule will be presented.

The detailed project plan will be elaborated together with detailed programme upon contract award, based on the exact day of T0 and respecting possible requests of change on ESS site. Nevertheless, once the design for each cave element would be frozen, the manufacture shall run independently on the local situation on ESS site. Thanks to the secured loading and storage

capacities at MShield concrete production workshop, the production shall run according to the original schedule, in order to mitigate risks when starting / ending production process, when change in aggregate batches, as well as in order to keep economic aspect of the project in positive CF.

Very important is going to be the progress of installation works at CSPEC Cave because of the proximity of the construction site to the BEER instrument. Note that the CSPEC Cave project was awarded to our company earlier last year.

The examples of the project delivery schedule for Magic cave which is very similar project in terms of complexity and location of the installation (the same E01 hall at ESS) was attached during prelim bid phase. In principle we are prepared to deliver in requested 17 months deadline. In order to do so, we will implement a weekly videocalls where the client + ESS must immediately and unchanging decision-making by the investor on the MShield design proposals. In order to meet the requested schedule, the client must ensure the quick and binding ESS approval processes (for example, the CDR approval must be in place within 2 weeks after design package submission. Note that the current experience is not the case). Further there will be a must for quick validation and allowance of the predesing completed early materiál pocurements (because of the long delivery terms, several items must be ordered well before TG3 milestone, in the early design phase). In order to meet the requested installation period, Client must ensure the crane, crane operators and other services such as guard / trucks delivery or ESS provisions for working at heights as per of the detailed installation plan and requirements. Experience based must is to manage by Client the permission for installation works during Saturdays.

Under above written conditions we are keen on and able to guarantee the provided delivery deadline of 17 months after contract signature.

Signature:


Michal Kazda

MShield s.r.o. executive head

Date:3.3.2024.....