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Laka plays with, amongst others things, its information services, an important role in the Dutch anti-nuclear movement.

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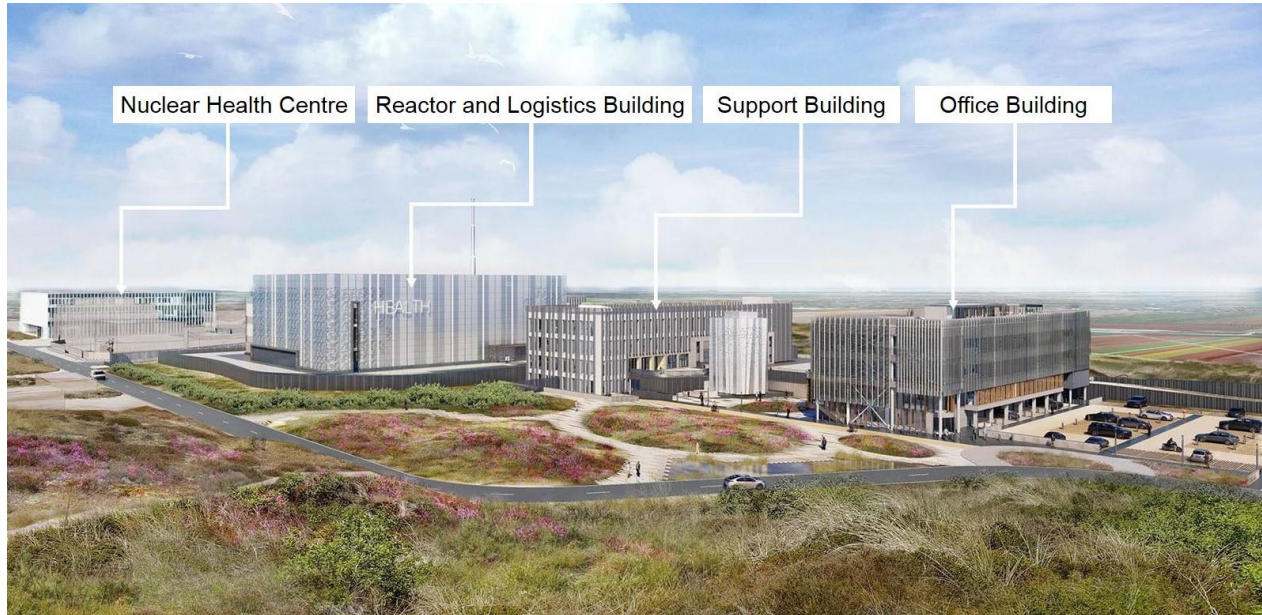
Market consultation for the General Contractor of the PALLAS Reactor Project

Introduction

The NRG foundation (Nuclear Research Group) initiated the replacement of the High Flux Reactor in Petten to continue the global supply of medical isotopes in the (distant) future. At the end of the year 2013, the Dutch government embraced this initiative and as a result, the Foundation Preparation Pallas-reactor (PALLAS) was founded to realise the PALLAS-reactor. NRG remained a committed partner. Effective 2020, PALLAS and NRG have formed a new organisational structure called a 'personele unie' which is intended to form the basis for continued future integration. The management of PALLAS and NRG have been combined and they are in the process of merging into one state owned enterprise.

PALLAS is funded by the Dutch government. The initial capital for the PALLAS reactor was provided by the Province of Noord Holland and the Ministry of Economic Affairs and Climate. In the recent years the decision was taken to fund the Program through the Ministry of Health, Welfare and Sports. The arrival of the PALLAS-reactor will enable the Netherlands to continue to help millions of people for the next 50 years. In the near future the PALLAS-reactor will produce medical isotopes for diagnosis, therapy and (medical) nuclear research. Every day, 30,000 people are helped with medical radioisotopes that are produced in Petten.

The PALLAS-team has been working in recent years to prepare for the construction of the PALLAS-reactor (www.pallasreactor.com). Until now the main focus has been on the design, acquire the required licenses and permits, and obtain funding. The basic design activities for the PALLAS-project have been finished in collaboration with ICHOS, the party contracted for the design activities. With the Argentinean company INVAP, which is the sole shareholder of ICHOS, ICHOS has wide experience in nuclear projects such as the OPAL reactor in Australia and it has a proven track record in safety and the successful completion of projects similar to the PALLAS project. The PALLAS organisation is now entering the construction phase in which it wants to contract a General Contractor for the construction of the PALLAS-reactor and logistic building and for the auxiliary scope such as the support building, office building, secondary cooling system building, nitrogen storage, surge tower and landscaping.



The impression shows the future buildings on the Energy & Health Campus in Petten.

Prior to the start of the tender process, PALLAS organized a Market Consultation to evaluate the current market situation. The most important objectives of this Market Consultation were to inform the market on the PALLAS project and gain feedback on the intended approach.

The scope of the PALLAS reactor project is to deliver a fully operational reactor that can be handed over to operations for the commercial production of isotopes and additionally to provide research facilities.

PALLAS aims for a Joint Delivery Model (JDM) for the construction of the reactor and logistic building including auxiliary scope.

The Market Consultation consisted of two phases: a questionnaire which participants could submit and a verbal explanation phase. During the verbal explanation phase the Project was presented and the results of the questionnaire were discussed. This document presents some of the main findings of the two phases.

Findings

During the Market Consultation, PALLAS had meetings with over ten parties. The summary of these meetings is reflected in the findings described below.

1. Joint Delivery Model

Almost all participants mention that the Joint Delivery Model, as described in the *Market Consultation Guideline*, could be one of the best approaches for complex projects like the Reactor Project.

2. The demarcation of scope and responsibilities must be defined clearly before the tender

Almost all participants mentioned that a clear demarcation of the General Contractor scope associated with their responsibilities is needed before a participant would participate in the tender.

This is applicable for design, construction, procurement, installation, commissioning and maintenance. There must be a clear understanding of the workload as well as the interfaces with ICHOS and the nuclear scope.

The participants emphasise their preference that ICHOS should remain responsible for the entire design and reactor performance, even if a General Contractor is involved in design activities. The participants feel confident to have ICHOS as overall responsible designer and delivery partner for the nuclear equipment.

3. Dependency on other parties for individual responsibilities and liabilities

According to the participants a significant risk associated with the Joint Delivery Model is the dependency on other parties for individual responsibilities and liabilities.

It is recommended that the Joint Delivery Model specifies the risk limitation for each party. Also, a proper process should be in place governing the collaboration within the Joint Delivery Model, including the adoption of among others, a clear and quick decision-making process, and a straightforward organisational structure in which key personnel have the necessary mandates and a common 'way of working' is agreed upon.

4. Alignment of incentives for all Participants

Feedback by the majority of the participants is that the pricing model should align incentives for all participants to deliver the project. Incentives on schedule are seen as the most important ones.

The participants also mention that risks should only be allocated to the parties that can manage that risk. Some of the participants advice that the pricing model should guarantee a certain turnover. It should also be a 'healthy foundation' for the General Contractor to make a profit. An incentive/bonus scheme for achieving milestones is given as an example to make the project (more) attractive to a General Contractor.

5. Elements for a successful collaboration in the Joint Delivery Model

Important elements for successful collaboration in the Joint Delivery Model could be obtained by a focus on control and administration, intensive collaboration on scheduling, clear communication guidelines, cultural program, early involvement, pro-active and transparent sharing of information and early warning signs. Also an aligned benefit and reward for both the General Contractor and ICHOS is mentioned as an element for success.

6. Share in pain/gain concepts also by major subcontractors

The majority of the participants mentions that not only the General Contractor and ICHOS, but also the major subcontractors should have the possibility to share in pain/gain and open book concepts.

It is also recommended that not only the General Contractor, but also PALLAS maintains a complete view of the supply chain and subcontracting.

As PALLAS will procure Long Lead Items, alignment of the conditions and selection processes for subcontracting should be included. Also it is recommended to apply similar rules on elements like pricing, inflation and late or no delivery.

7. Contract templates

Multiple participants advise using a standardized NEC or FIDIC template, potentially slightly adapted to the specific needs of the PALLAS project. The NEC4 suite of templates is seen by the majority of the participants as a suite that might fit very good to the Joint Delivery Model. The target pricing option of NEC is also frequently mentioned as a good base for a target pricing model. It is recommended that a set of the heads of terms is available during the selection phase.

8. Local supply chain

Many of the participants mentioned the importance of involvement of local contractors and suppliers. These participants will try to involve, either through subcontracting or via a consortium/joint venture, Dutch companies.

9. Availability of resources

The availability of resources is seen as a major challenge by the participants for projects like the PALLAS reactor project. This is not only related to materials, but also to equipment and the availability of manpower, both blue and white collar. As a consequence of scarcity of resources, escalation could be significant over the duration of the project. Participants indicate that fair escalation principles will be important.

Closure

The participants of the Market Consultation were Vinci, Hochtief, Bilfinger, FCC, Enka, Visser & Smit Bouw, Bouygues, Cegelec, Mobilis, Denys, Equans and Besix. In addition to the main findings the participants appreciated the envisioned tender process with a selection phase and a competitive dialogue procedure. Feedback from the participants on the tender schedule is that it is ambitious but realisable, also in combination with the recommended three dialogue rounds.

Most of the findings of this Market Consultation are being used in the development of the tender documents and tender process.