NPP KRŠKO 2 TIME SCHEDULE FOR LICENSING AND PERMITTING PROCESSES

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ABSTRACT

The paper presents the results of an external study developed for the investor of the proposed new Nuclear Power Plant (NPP) Krško 2. The aim of the study was to clearly define the time schedule for licensing and permitting processes, to identify legal and other obstacles in the procedures and, on the basis of practical experiences, as well as experiences from foreign practices, to develop optimization of procedures in order to enable the implementation of the NPP Krško 2 from the strategic decision through siting process to plant start-up and operation in the optimal time frame.

The initial results of the study showed that within the current legislative framework and with the integrated Environmental Impact Assessment (EIA) into National Spatial Plan (NSP) procedure the time schedule from the strategic decision to commercial operation of the plant would be around 14 years. This is not in line with the foreign practice where the investment is carried out in 10 years starting from the strategic decision. The general opinion is that the project is interesting and commercially viable if the siting process from the strategic decision up to the first concrete can be accomplished in less than 7 years.

Based on further fine-tuning of the initial results we were able to develop a realistic plan that accounts for all the necessary permits, provides extra time for critical activities, allows for simultaneous proceedings and minimizes critical path dependency. The result is a 10-year project time schedule that includes spatial planning and construction of NPP Krško 2, where the Environmental Impact Assessment (EIA) is treated separately from the National Spatial Plan (NSP). Provisions for proposed approach are already within the current legislation and are seen as the logical way to obtain NPP Krško 2 permits.
1 INTRODUCTION

NPP construction is a challenging project, surrounded with different kind of risks, like financial, business and political. Due to these reasons it is very important that siting and construction process is implemented in quick and efficient way, with minimal complications which prolong the proceedings at most.

An investment in nuclear facilities represents a large financial challenge for individual states and therefore searching for potential investors which would be interested in the new NPP construction project is very important. This means that the time frame from the national strategic decision to the start of commercial operation is limited and prolongation of the time frame (due to various reasons) can consequently mean less commercial interest of potential investors. For this reason shortening and optimizing the duration of the procedure for obtaining all necessary permits is crucial and should be as short as possible.

2 NPP KRŠKO 2 TIME SCHEDULE FOR OBTAINING OF PERMITS

The external study developed for the investor considered four variants of licensing and permitting processes. First variant is made according to the current legislation and other three variants according to the optimization of the current legislation procedures.

2.1 Time schedule assumptions

The study was done by taking into account several assumptions which influenced on set of activities and their duration within the procedure. The two key assumptions which have greater influence on time schedule's structure are:

- supplier must be selected during the preparation of the conceptual design as the basis for adopting the National Spatial Plan (NSP) (the investor should have information which are not part of general offer or are not available before the signing of the contract) and

- taking into account the established siting procedures, primarily those related to the Environmental Impact Assessment (a Strategic Environmental Assessment (SEA) and EIA) and public debate.

2.2 Obtaining permits procedure optimization for NPP Krško 2

Obtaining permits procedure was assessed from two aspects – amending the current legislation or preparing a new act.

2.2.1 Approach with minimal changes in current legislation

Legal order can be changed and implemented entirely within the Ionising Radiation Protection and Nuclear Safety Act [1] as a “lex specialis”. With this approach the amending act does not affect other acts and removes the major legal obstacles which impede fast implementation of the procedures. The legislation is amended only in order to enable procedures implementation in a reasonable time and only in the construction phase of NPP. Spatial planning phase, environmental protection and construction phase are the same as for

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1 Lex specialis is a Latin phrase which means “law governing a specific subject matter”. The doctrine states that a law governing a specific subject matter overrides a law that only governs general matters. This principle also applies to the construction of a body of law or single piece of legislation that contains both specific and general provisions.
other facilities. These amendments do not introduce new legal procedures; they only determine certain specifics which are applicable in the use of the existing procedures regarding nuclear facilities.

2.2.2 New special legislation for nuclear facilities

New special regulation concept is proposed for siting and construction of NPP Krško 2. There are many foreign practices where the same concept is used. The new regulation should be written as a new act or as new chapter in Ionising Radiation Protection and Nuclear Safety Act [1]. It would apply only for nuclear facilities and would be exempted from the valid rules in the Spatial Planning Act (ZPNačrt) [2], the Act Regarding the Siting of Spatial Arrangements of National Significance in Physical Space (ZUPUDPP) [3], the Ionising Radiation Protection and Nuclear Safety Act [1], the Energy Act [3] and other acts to a degree necessary for optimising the procedure.

The new act aims to achieve conditions under which the construction of a nuclear facility will be possible and confirmed by an appropriate decision, so-called »site permit«, which would provide additional assurance for the investor; the phase-based planning with reduced risks and at the same time it enables appropriate affirmation of constitutional rights.

2.3 Variant proposals regarding time schedule

In the external study were also prepared time schedules with set of activities referenced to the necessary documentation and conditions which are needed for smooth NPP Krško 2 siting and construction.

Each time schedule covers all phases of the NPP Krško 2 siting and construction procedure and activities at each stage according to the different anticipated procedure and different time integration of supplier.

Table 1: Different variants of the NPP Krško 2 time schedule

<table>
<thead>
<tr>
<th>Time schedule</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Time schedule 1 (TP-1)</td>
<td>According to the current legislation</td>
</tr>
<tr>
<td>Time schedule 2 (TP-2) – variant 1</td>
<td>According to the proposal for minimal optimisation and the selection of the supplier in the earliest phase of the procedure</td>
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<td>Time schedule 2 (TP-2) – variant 2</td>
<td>According to the proposal for minimal optimisation and the selection of the supplier in the last phase of the procedure</td>
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<tr>
<td>Time schedule 3 (TP-3)</td>
<td>According to the special legal regulation for nuclear facilities</td>
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2.3.1 Time schedule 1 (TP-1)

For the purpose of presenting the procedures and implementation of the investment for NPP Krško 2 the time schedule TP-1 was prepared, showing all activities required by the current legislation. After examining of the legislation and established practice, the time schedule was developed which took into account the current legislative bases, although they are not consistently harmonised, what may allow different interpretations of the requirements and the course of procedures. The valid spatial planning procedure includes also the selection
of the NPP supplier, which presents specifics in regard to other infrastructural facilities of national significance.

The TP-1 takes into account the selection of the supplier in the earliest phase, immediately after adopting the strategic decision – the adoption of the National Strategic Spatial Plan.

This revealed that the entire procedure for project implementation up to the start of operation can be carried out in 15 years and 6 months [5]. Some phases are taking into account statutory deadlines, although they are not met in practice. From experience, the more realistic period is 4 years longer, which is around 19 years.

2.3.2 Time schedule 2 (TP-2)

Many legal bases in the existing legislation are not harmonized together and this is one of the reasons for optimization, which would enable more transparent and continuous procedure and shorten the project implementation time. The guideline here was that interventions into the valid legislation should be minimal, so the existing legal order and established procedures are preserved to the greatest possible extent.

The set of activities was presented in two variants of the TP-2, namely making the selection of a supplier in the earliest phase of the procedure, which is the TP-2 – variant 1, and making the selection of a supplier in the last phase of the procedure, which is the TP 2 – variant 2.

Corrected procedure would enable the beginning of siting procedure immediately after the strategic decision, i.e. after the adoption of the National Energy Plan. In the case of the TP-2 – variant 1 the project can be implemented in 13 years and 8 months [5], while in the case of the TP-2 – variant 2 it would be 14 years and 6 months [5] from the strategic decision. Two demanding phases were eliminated or optimized from the critical path, in regard to time:
the adoption of the National Spatial Plan and Consent for construction by the Slovenian Nuclear Safety Administration (SNSA). The adjusted procedure also tries to reduce the risks of prolonging time in the decision-making phases by competent holders of spatial planning and other parties involved in the procedure.

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2.3.3 Time schedule 3 (TP-3)

If we take into account additional specifics of the NPP project, we propose a more comprehensive change of legislation, namely the preparation and adoption of a new special act for NPP construction. This would include the site permit into the procedure and would give the investor additional guarantee that further procedures will not entail changes in project site conditions, which may mean changing of project solutions in the NPP technology and consequently the investment's value.

The new act concept, presented in the time schedule TP-3, would enable the beginning of the spatial planning and siting procedure immediately after the special act is enforced. The selection of the supplier is planned after the site permit is issued, when the plant parameter envelope and location are determined (the latest phase of the supplier selection). In the TP-3 the project can be implemented in 15 years and 9 months [5]. If the time for preparing and enforcing the act is subtracted, it is possible to bring the project status to the start of operation in 14 years and 3 months [5].

3 TIME SCHEDULE FOR OBTAINING OF PERMITS FOR THE NPP KRŠKO 2 – GEN VARIANT

Internal thinking revealed that the licensing and permitting processes can be further optimized in order to reduce the time in which all necessary permits for the construction of NPP Krsko 2 can be obtained. As a result, the internal time schedule was prepared for efficient and transparent implementation of the project from preliminary works, preparation of relevant documents to acquire all necessary permits for construction in accordance with regulatory legal acts which cover spatial, nuclear, construction and environmental field.
(ZUPUDPP [3], the Construction Act [6] …). Investor provides a 10-year time frame from project decision to commercial operation.

The optimization was carried out inside the framework in procedure of siting and trial operation. Predicted construction time was four years consistent with the practice trend in nuclear countries around world.

3.1 Description and explanations

Time schedule TP-1 from external study has been optimized with a view to shortening the procedure from project decision to commercial plant operation. It is unimaginable to hold the investors in the project from the decision to first concrete for the period longer than 7 years. This is the main reason why it was necessary to review the siting procedure in compliance with the current legislation and establish the optimal scenario for the implementation procedure. In order to achieve this objective the EIA process was excluded from NSP procedure and considered separately. The result is a 10 year time frame for project implementation showed in Figure 5.

Finally Environmental Consent is required at the stage of obtaining the Construction Permit. The current legislation under the ZUPUDPP [3] prefers managing the infrastructure projects of national significance as one integrated procedure unlike the Spatial Planning Act (ZPNačrt) [2] which was based on the separation of NSP and EIA procedure. ZUPUDPP [3] also allows the separation of the NSP and EIA procedure but only as a solution in case when the required data for starting the EIA procedure in the NSP procedure are not available in such details as needed. Siting procedure (EIA procedure inside NSP procedure) prolongs the siting phase and makes it impossible to implement the project within the viable time frame in practice.

In the framework of internal study it was found out that the adoption of the NSP in a separated procedure from the EIA procedure is sufficient for the preparation and arrangement of all preliminary activities on the construction site as well as for the modernization of transport routes from Koper (Slovenian port) to the location of the NPP.

Identified advantages of separated NSP procedure from EIA procedure are:

- According to faster adoption of NSP procedure the Construction Permit procedure for site preparation and infrastructure relocation can be started. We assumed that at least the confirmed NSP is required. In this way the delays which would have multiannual gap between obtained Construction Permit and actual start of construction (first concrete) are mitigated,

- Infrastructure relocation and construction site preparation are no longer on critical path and can already start in parallel with Environmental Consent procedure. Despite that, the plan does not provide premature site preparation and prevents the investor from being exposed to the risk. Site preparation starts early enough that will end before the issuing the Consent to construction and Construction Permit,

- Finally Environmental Consent is on critical path because it was conservatively assumed that one year period for Environmental Consent procedure is needed. In this case, Construction Permit procedure is not on critical path. One of two main procedures is always on critical path, either is Environmental procedure or Construction Permit procedure of nuclear facility. Both present potential risk for the project,
- The NSP procedure and the Environmental Consent procedure can be implemented in parallel in some steps, but on the time schedule – variant GEN it is implemented in sequence due to optimization of other activities. The Environmental Consent procedure and Construction Permit procedure can be implemented in parallel as well. In this way additional time is released which allows the extension of public debate from thirty days to six months, and one year for the Finally Environmental Consent.

![Time Schedule –GEN Variant](image)

**Figure 5: Time Schedule –GEN Variant [7]**

### 4 CONCLUSIONS

In accordance with current legislation the predicted time frame from the strategic decision to commercial operation could be around 15 years by taking into account statutory deadlines, although they are not met in practice. Practice shows that the more realistic time frame is 4 years longer, which is around 19 years. The project time frame could be reduced with minimal changes in current legislation and in the best case this reduction could be around 2 years, depending in which phase of the project supplier is selected. Even in the case of a new special legislation the predicted time frame would be around 16 years.

This is not in line with the foreign practice where the investment is carried out in 10 years starting from the strategic decision. The general opinion is that the project is interesting and commercially viable if the siting procedure from the strategic decision up to the first concrete can be accomplished in less than 7 years.

Based on further fine-tuning of the initial results we were able to develop a realistic plan that accounts for all the necessary permits, provides extra time for critical activities, allows for simultaneous proceedings and minimizes critical path dependency. The result is a 10-year project time schedule that includes spatial planning and construction of NPP Krško 2, where the EIA is treated separately from NSP procedure. Provisions for proposed approach are already within the current legislation and are seen as the logical way to obtain NPP Krško 2 permits.

It is necessary to emphasize that a 10-year project time schedule can be achieved if a clear decision is made and if there is support from the government, politicians and competent institutions.
REFERENCES


[5] Savaprojekt d.d., Time schedule for obtaining of permits for the NPP Krško 2 (Terminski plan umeščanja JEK2 v prostor), Krško, October 2012

