



CERTIFIED MANAGEMENT SYSTEM  
ISO 37001

SNN no. 12574/13.11.2023

**APPROVED BY,**

**Chairman of the Board of Directors  
Teodor Minodor Chirica**

#### **NOTE**

**regarding the information on the conclusion of FEED Phase 1 of the Project based on the technology of Small Modular Reactors (SMR), respectively the approval by the Ordinary General Meeting of Shareholders of the transition from FEED Phase 1 to FEED Phase 2 of the Project based on the technology of Small Modular Reactors (SMR)**

#### **1. Approval authority/General aspects**

According to the provisions of art. 13, par. (2) item h) of the updated Articles of Incorporation of SNN, the General Meeting of Shareholders “*approve the development strategies and policies of the Company*”.

During the meeting of the GMS held on 22 September 2022, the Ordinary General Meeting of Shareholders approved by resolution no. 8/22.09.2022, the strategy for implementation of Small Modular Reactors (SMR) Project.

Thus, FEED stage Phase 1 was started, and several agreements were concluded for the preparation of the engineering and design studies related to this stage necessary for defining the project, by reference to the specific requirements on the site and to the applicable licensing and regulatory requirements of SMR technology.

Objectives to be achieved by transition to Feed stage Phase 2 consider the development of the items of Phase 1 of FEED related to the site and, additionally, as well as a detailed definition of the project purpose based on the technology of Small Modular Reactors (SMR).

Based on the transition decision to stage FEED Phase 2, the sub-stages related to the phase shall be defined, the budget shall be determined, as well as the contractual architecture, the financing details and the implementation schedule. Thus, in a subsequent stage, we will submit for the approval of the General Meeting of Shareholders proposals regarding the actual start-up of FEED stage Phase 2 and implicitly, the approval of the budget, financing strategy, conclusion of agreements and other activities specific to this stage.

#### **2. Presentation of the project based on the Small Modular Reactors technology (SMR).**

##### **2.1. Introduction**

The project **based on the Small Modular Reactors technology (SMR)** represents a priority project of S.N. Nuclearelectrica S.A. (“SNN”), as an organic part of the company development strategy, its implementation significantly supporting the production capacity at the national level, as well as the industry development based on SMR, for the purpose of accession to the status of regional center in the field of manufacturing, assembling components, training for acquiring technical expertise and operation.

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Technology based on Small Modular Reactors (SMR) is deemed as necessary and desirable in the specialized industry, due to the low complexity degree in design, corroborated with the increased safety and reliability level, as well as reduced costs related to the implementation and operation of such technology. SMR technology has the opportunity of a scalability depending on the local market requirements and the functional needs of the energy system.

## ***2.2. Objectives expected to be achieved by implementing the Project based on Small Modular Reactors technology (SMR).***

The main objectives of the project based on Small Modular Reactors (SMR) are the introduction of new electric power production capacities at national level, implementing the first SMR reactor in the Central and Eastern Europe, as well as the development of a center for professional training and components assembly of related to SMR technology, for the purpose of building up a regional hub based on SMR technology.

It is expected that the achievement of such objectives shall have a significant contribution to:

- The reduction of the electric power quantity imported from external sources, respectively the increase of accessibility to electric power in Romania;
- The increased stability of the National Energy System (SEN), due to SMR contribution to the base load energy production;
- The development of chains such as “Supply Chain” and of the Romanian industry by focusing efforts on local firms able to support the direct implementation of the Project, as well as other similar projects in Romania or in the region;
- The development of a regional hub for manufacture, assembly and operation/maintenance center of SMR plants in the region.

The Small Modular Reactors (SMR) Project will contribute as well to the subsequent development of the area where it is to be located, by supporting the local economy, supported by the increased consumption of ancillary local products and services.

## ***2.3. The Project Implementation Strategy***

, Considering the international best practices in this area (allocating significant funds in the preparatory pre-project stage), the Project development and implementation strategy took into account the establishment of a dedicated project company, which structured the Project in distinct development stages, as follows:

**Stage 1 – FEED Phase 1:** it represents a stage of the planning activity, studies, engineering and design comprising essential items for defining the Project, by reference to the requirements of the site of the former thermal plant from Doicesti, to the applicable national and international licensing and regulatory requirements. They provided quantitative information necessary for a rigorous planning of the activities and a fundamental estimate of the project costs. The impact of the Romanian requirements and of those related to Doicesti site upon the Project is detailed. In parallel, geotechnical studies, the Licensing Basis documentation (LBD), the environment analysis (EIA) and different notifications sent to the competent authorities were initiated.

**Stage 2 – FEED Phase 2:** shall develop the topics of Phase 1 of FEED and, additionally, it shall involve a detailed definition of the working purpose. Cost estimates shall reach an improved level of accuracy and shall bring the project to the preparation stage for launching orders. During this period, the project financing details shall be established, as well as details regarding the notice related to the State aid, the initial analysis of IAEA, the notice under Article 41. At the end of the phase, the decision gate will be followed with a view to making a Final Investment Decision (FID).

**Stage 3 – Engineering, Initial procurement Stage, preparation of the location:** the building permit shall be requested, the environmental analysis (EIA) shall be approved, the mobilization of the construction site and the preparation of the location shall be made. The manufacture of reactor modules shall be started up, and the detail design shall be completed to a large extent. Deep excavations shall be performed, as well as other essential construction works. Certain activities during this stage shall intertwine with the subsequent phases of the Project: among these, the completion of reactors and of walls of the water pool.

**Stage 4 – Construction:** this stage shall start with the decision gate “Full Notice to Proceed” and shall comprise most of the construction activities. During this stage as well, IAEA approval shall be requested and obtained for “Safety Aspects of Long-Term Operation” (SALTO).

**Stage 5 - Commissioning:** the reactor modules shall be installed and fuel loading shall take place, followed by the final inspection. Works on those 6 modules shall have a delay of approximately 1,5 – 2 months.

**Stage 6 – Commercial Operation:** this stage shall start with the first energy sale day in the market.

### **3. Stage of the Project based on Small Modular Reactors (SMR) technology.**

#### ***3.1. Information regarding the development of FEED Phase 1***

The purpose of FEED stage Phase 1 consisted in the initiation of certain planning activities, studies, engineering and design comprising essential items for defining the Project, by reference to the requirements of the site of the former thermal plant from Doicesti, to the applicable national and international licensing and regulatory requirements. They provided quantitative information necessary for a rigorous planning of the activities and a fundamental estimate of the project costs such as AACE Class 4 (+50/-30%).

During the conduct of the first stage of FEED study, a series of technical studies of Due-Diligence nature were developed simultaneously, with a view to supplementing the conclusions in FEED study and the consolidation of the conclusions emphasized in IAEA Mission regarding the selection of Doicesti site:

- The site survey relating to investigations, the results of which acknowledged the absence of certain capable seismic fissures, within the meaning of the definition in the applicable IAEA standards;
- The site survey relating to analyses, the results of which acknowledged the absence of certain elements supporting the existence of the liquefaction potential on the site;
- The study for the purpose of developing the Licensing Basis Documentation (LBD), with a view to developing the regulatory framework of the Project. The document received CNCAN acceptance, issued by CNCAN letter no. 3936 dated 22 August 2023.

In addition, there were initiated the notification procedures with the competent authorities for the Project based on the Small Modular Reactors (SMR) technology, for the purpose of establishing certain working interfaces facilitating the achievement of certain fundamental milestones in the following stages of the Project (for example, aspects regarding the assessment of the environmental impact and others).

FEED Stage Phase 1 of the project was structured in 13 main activities, the status of which is hereinafter presented. Thus, by reference to the main activities, on the date hereof, the achieved completeness degree is 92%, without any budgetary overrun; the activities still in progress shall be completed in the first half of November 2023, when the Final Report related to this stage shall be issued.

The main FEED Phase 1 activities and objectives refer to:

**Activity 1** (“Task 1”) – Start-up of the project and development of FEED 1 execution plan;

**Activity 2** (“Task 2”) – Procurement activities: as part of this task, there was a series of objectives that were met, such as: Environmental Impact Assessment (EIA), local engineering services the geotechnical and soil evaluation study. Additionally, there were assessment made with regards to sources of supply and local content for the project.

**Activity 3** (“Task 3”) – Assessment of the specific impact on the site related to the power plant design (“Standard Plant Design”) involved a series of activities, amongst which there was the evaluation of codes and standards applicable in Romania, regarding the engineering, respectively the construction aspects.

**Activity 4** (“Task 4”) – The development of specifications and standard drawings for the specific site design;

**Activity 5** (“Task 5”) – Analysis and update of the site layout. Important elements were identified in the revision of the general site layout, based on the analysis of the existing situation on the field. Subjects of interest were clarified, such as the barrage area on Ialomita river, the utility channel, the cooling towers, the interface points with electric substations of 110/220kV, as well as the interface points with the roads and the railway crossing. Within such activity, the locations of the major components of the power plant were identified.

**Activity 6** (“Task 6”) – Analysis and update of diagrams such as “Piping & Instrumentation Diagram” (P&ID):

**Activity 7** (“Task 7”) – Analysis and update of 3D virtual model of the power plant, as the modelling shall facilitate the development of Plan Layout in Romania. .

**Activity 8** (“Task 8”) – Initiation of the engineering deliverables

**Activity 9** (“Task 9”) – Development of the estimate of Class 4 costs

**Activity 10** (“Task 10”) – Specific Design requirements

**Activity 11** (“Task 11”) – Overview workshop against to ASME

**Activity 12** (“Task 12”) – Impact assessment over local development:

**Activity 13** (“Task 13”) – Final Report: within such activity, an intermediary activity report was issued, which was submitted for review to RoPower team, comments were verified and are to be incorporated in the final report by NuScale, to be issued by mid-November.

Worth to be mentioned, as well the fact that during this stage, based on a complex assessment, CNCAN issued an official letter of approval of the Licensing Basis Document in August 2023. The approval of such document represents a fundamental milestone of the project, which will facilitate the implementation of the licensing process for all development stages of the nuclear power plant.

### ***3.2. Cost effectiveness by activities***

The current stage shows the achievement of a completeness degree by reference to FEED Phase 1 of 92%, without exceeding the budget. According to NuScale estimates, the activities still in progress shall be completed in the first half of November 2023, when the Final Report shall be issued by NuScale. Considering that they identified available budgetary resources, it is envisaged to include certain additional activities supposed to bring benefits to the Project, including from the perspective of the transition to FEED stage Phase 2.

### ***3.3. FEED stage Phase 2***

As provided for in the project implementation strategy, the purpose of FEED 2 phase is to develop the items of Phase 1 of FEED related to the site and, additionally, to obtain a detailed definition of the project purpose based on the technology of Small Modular Reactors (SMR).

Based on the transition decision to stage FEED Phase 2, the sub-stages related to the phase shall be defined, the budget shall be determined, as well as the contractual architecture, the financing details and the implementation schedule for the Small Modular Reactors technology.

Thus, during FEED Phase 2, elements from FEED Phase 1 specific to the site shall be further developed and, supplementary, there will be analyses and advanced recommendations with regards to the optimum development option of the Small Modular Reactors technology.

Technology based on Small Modular Reactors (SMR) remains necessary and desirable in the specialized industry, due to the low complexity degree in design, corroborated with the increased safety and reliability level, as well as reduced costs related to the implementation and operation of such technology.

SMR technology has the opportunity of a scalability depending on the local market requirements and the functional needs of the energy system. The main objectives of the project based on Small Modular Reactors (SMR) are the introduction of new electric power production capacities at national level, implementing the first SMR reactor in the Central and Eastern Europe, as well as the development of a center for professional training and components assembly related to SMR technology, for the purpose of setting up a regional hub based on SMR technology.

In view of continuing the project by reference to the implementation strategy and to the advanced implementation degree of Feed Phase 1 stage, we consider the transition of the project in FEED 2 stage as an opportunity, so that there are no gaps between the 2 stages.

Subsequently to the transition decision to stage FEED Phase 2, the sub-stages related to the phase shall be defined, the list of contractors and the budget shall be determined, as well as the contractual architecture, the financing details and the implementation schedule. Thus, in a subsequent stage, we will submit for the approval of the General Meeting of Shareholders proposals regarding the actual start-up of FEED stage Phase 2 and implicitly, the approval of the budget, financing strategy, conclusion of agreements and other activities specific to this stage.

#### **4. Proposals submitted for the Ordinary General Meeting of Shareholders of SNN approval**

Given the above, we submit the following to the Ordinary General Meeting of Shareholders of SNN:

1. The information related to the conclusion of FEED Phase 1 of the Project based on the technology of Small Modular Reactors (SMR)
2. The transition from FEED Phase 1 to FEED Phase 2 of the Project based on the technology of Small Modular Reactors (SMR)

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