



DEVELOPMENT and MANAGEMENT of REVIEW and ASSESSMENT in TÜRKİYE

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Contents

- Management System
- Project Management Approach
- Review and Assessment Process in Nuclear Safety Department
- Management of Technical Support Organizations
- Developing and Managing the Review and Assessment Project for Authorization of Akkuyu NPP



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Management
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Project

Management

R&A in NDK

Management of
TSO

Developing and
Managing the
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The Need



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of TAEK

- In effect since April 2014
- ISO 9001 certificate by 2017

of NDK

- Availability of TAEK documents developed for regulatory processes to NDK
- Drafted and updated MS documentations
 - Authorizations, including review and assessment
 - Inspection and enforcement
 - Procedures are laid out to support main processes
- ISO 9001-2015 and ISO 45001 certificates by 2021
- Certification on information security continues

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Review and Assessment in IMS

- Applicant has to demonstrate the safety to the satisfaction of RB
 - Facility complies with safety objectives, principles and criteria
- The RB has to perform review and assessment on submissions
 - Against predetermined objectives and criteria
 - According to predetermined procedures
 - With predetermined goals
- ***How to:*** Procedure for Review and Assessment and Reporting of Results for Nuclear Installation
- ***Who, What, Why, When and How Long:*** Project Management Plan (PMP)

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Project management in R&A

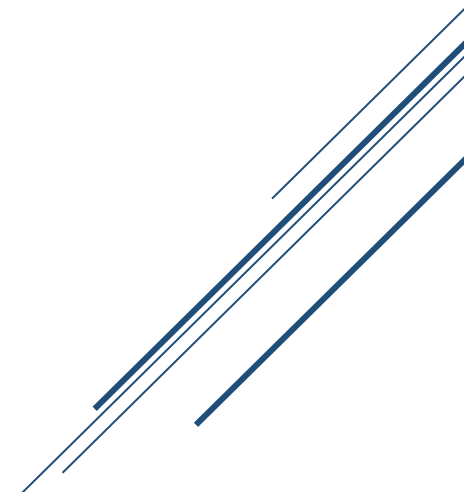
- Enables utilization of staff from different departments of NDK within the project team
- Enables the management of authorization activities outside of daily workload
- Enables NDK manage its activities within the Project Management Plans
 - Who, how, why, what, when and how long
 - Defining and assigning tasks (Matrix type multitasking of staff)
 - Work breakdown structure and schedule to determine critical paths
 - Resolving means of interactions between the R&A groups

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Project management in R&A

- Formal project management training for all key personnel
- Utilization of professionally developed project management tools
- Ensures formalization of activities specific to the project
- Enables formalization of reporting needs
- Requires
 - Formal project management training for all key personnel
 - Utilization of professionally developed project management tools
 - Separate PMPs for each nuclear installation



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Project management in R&A

- Organization of project team
 - Key Personnel selected from core staff
 - Groups for main activities
- Designation of roles and responsibilities of individuals and groups
- Management of human resources and training in departmental level considering all projects
- Document management system
 - Coding system for all records, reports, etc
- Security measures for submissions

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Project management in R&A

- Management of external relations
 - Applicant, working groups
 - TSO, regular meetings for work development
 - Other regulators, if applicable
- Roles and responsibilities of key positions
 - Project Steering Committee
 - Project specific decision making and conflict resolution
 - Project Manager
 - Manage project activities
 - Prepare and sign Safety Evaluation Reports
 - Approve issues or additional requests for information (ARIs) submitted
 - Leading communicator on general working groups with applicant

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Project management in R&A

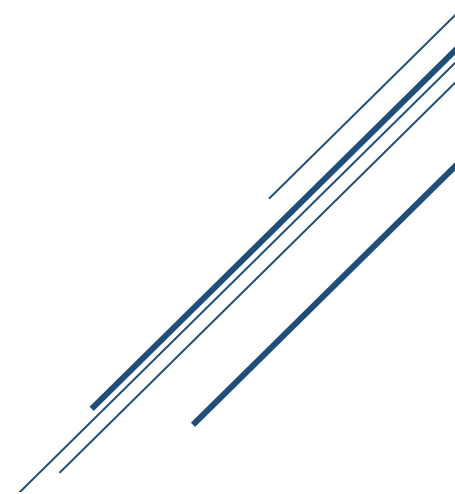
- Roles and responsibilities of key positions
 - Group leaders
 - Review and assess assigned documents
 - Prepare and sign review reports
 - Endorse or update issues or ARIs submitted for approval
 - Ensure group responsibilities are fulfilled
 - Lead communicator on specific working groups with applicants
 - Reviewers
 - Review and assess assigned documents
 - Prepare and sign reviewer reports
 - Raise issues and submits ARIs for endorsement and approval

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Main Actors of R&A in NDK

- Nuclear Regulatory Board
 - Decision making in general, decision on authorizations
- President of NDK
 - Decision making in delegated issues
- Project Management
 - Dept. of Nuclear Facilities for nuclear installations
 - Dept. of Radiation Protection for radioactive waste facilities
- Project team from various departments of NDK
 - Main reviewer, communicator with applicant
- Technical Support Organizations
 - Independent review for NDK
 - Verification calculation on behalf of NDK



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R&A Procedure

- Application for an authorization
 - “Guidelines for authorization applications”
 - What to submit is in PMP
- Completeness control of application
 - “Guidelines for authorization applications”, requirements for quality of applications
 - Content requirements in licensing basis
 - Project team and TSO in parallel
- Review and assessment of application
 - With respect to Board approved licensing basis
 - R&A by project team
 - Depth of R&A depends on the strength of project team
 - Independent and in-depth R&A by TSO

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R&A Records and Reports

- Records of findings
 - Issue recording and tracking system
 - ARIs (Additional Requests for Information)
- Reporting of findings for decision making
 - Reviewer reports by individuals
 - Review reports by group leaders
 - Safety Evaluation Report by Project Management

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Procurement of Services from a Technical Support Organization

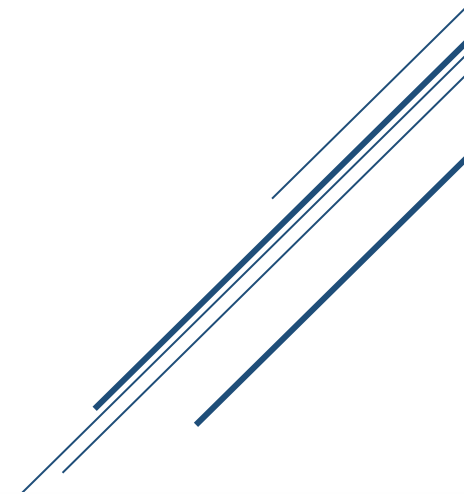
- Possible methods
 - Procurement for predefined services
 - Need to define all services required
 - Lump sum or man-hour price setting
 - Procurement of general support
 - May define services as needed
 - Usually, man-hour price but difficult to keep track of man-hour, hence payments
- Drafting technical specifications
 - Defining of services expected from TSO
 - Defining acceptability criteria for bidders
 - Technical, organizational and financial competence
 - Utilization of
 - IAEA experts on technical requirements
 - National experts on administrative and financial issues of procurement

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Procurement of Services from a Technical Support Organization

- Issues to be considered
 - Decision still need to be made by RB
 - Clear definition of TSO input to RB
 - RB personnel to draft SER
 - Working language with TSO
 - Frozen licensing basis
 - Training of regulatory personnel
 - Training of future national TSO personnel
 - Scope of R&A expected, including ARIs
 - Scope of analyses that TSO would repeat
 - Independent analyses from vendor and/or designer



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Procurement of Services from a Technical Support Organization

- Key decisions made
 - De facto and de jure independence from owner, vendor and designer
 - Technical competence in proposed design
 - Competence on licensing basis
 - Ability to perform safety analyses with tools independent from ones used in design
 - Financial stability to ensure completion of R&A
 - Full scope R&A by TSO
 - Training of RB personnel
 - Drafting acceptance criteria for design and review and assessment guidelines

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Control of Services of a Technical Support Organization

- Progress reports on its activities
- Technical evaluation reports for result of R&A
- NDK chose
 - No guidance on TSO findings to ensure an R&A independent from RB
 - Comparison of TSO and project team findings for internal training, but no feedback to TSO

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2000s

- Developing and updating safety regulations
- Enhancing the resources of regulatory body
 - Planning on human resources
 - Difficulties on increasing the human resources without an ongoing project
 - Main focus on maintaining and enhancing the competency of core staff
- Planning ahead for an NPP project
 - Identifying needs in all areas
 - Prioritizing the issues to deal with
- Developing management system of the regulator
 - Identifying and documenting the main processes
 - Developing standards for internal activities
- Managing the delays in decision making for embarking nuclear

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2010-2012

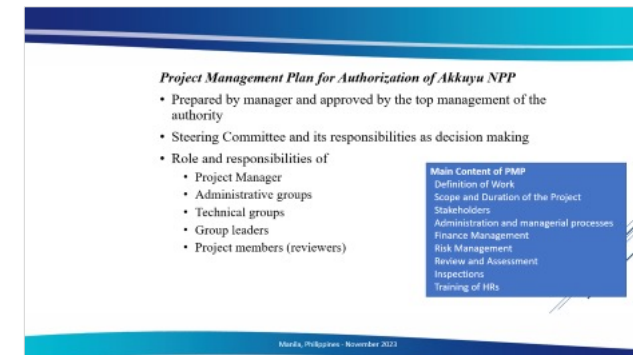
- Intergovernmental agreement for Akkuyu NPP
- Increasing human resources with transfers within the authority
- Training in project management for potential managers, group leaders, etc
- Drafting Project Management Plan for Authorization of Akkuyu NPP
- Establishing the project team within the DNS of TAEK
 - About 20 people at start up

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2010-2012

- Intergovernmental agreement for Akkuyu NPP
- Increasing human resources with transfers within the authority
- Training in project management for potential managers, group leaders, etc
- Drafting Project Management Plan for Authorization of Akkuyu NPP
- Establishing the project team within the DNS of TAEK
 - About 20 people at start up
 - To grow up to around 60 at peak time
 - New assignments from inside
 - New hires



Project Management Plan for Authorization of Akkuyu NPP

- Prepared by manager and approved by the top management of the authority
- Steering Committee and its responsibilities as decision making
- Role and responsibilities of
 - Project Manager
 - Administrative groups
 - Technical groups
 - Group leaders
 - Project members (reviewers)

Main Content of PMP

Definition of Work
Scope and Duration of the Project
Stakeholders
Administration and managerial processes
Finance Management
Risk Management
Review and Assessment
Inspections
Training of HRs

Project Management Plan for Authorization of Akkuyu NPP

- Areas that regulatory body lacks human resources
- Areas that regulatory body lacks expertise/competency
- Depth of review and assessment
 - By project team
 - By technical support organization(s)
- Scope of work to be delegated to TSOs
- Means of integrating TSO output to local review and assessment process
- The communication channels with the applicant at various levels
 - Communication between the top managers of the main stakeholders
 - Communication between the project manager of NDK and relevant person responsible from licensing
 - Technical communication among the experts on specific areas

Project Management Plan for Authorization of Akkuyu NPP

- Technical level communication with applicant
 - Working groups on areas needed
 - To ensure mutual understanding on
 - Expectations of NDK at on any issue
 - Actions that can be taken by applicant in response to ARIs or issues
- Records to be kept during the review and assessment
 - Acceptance of application
 - Task assignments for reviewers
 - Issues determined
 - ARIs, including responses and follow ups
 - Proposed conditions for the authorizations
- Reports to be produced, from review reports to SER



Project Steering Committee		
Project Manager		
		Support Services; document management, admin, HR, legal, etc.
Ad Hoc Groups	R&A on Siting	R&A on Construction
Licensing Basis Long lead items TSO	Site License EIA	Management Systems Nuclear Systems Mechanical Systems Electronic and Electric Systems Radiation Protection and Radwaste Civil Engineering and Fire Protection Physical Protection Personnel

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2010-2012

- Determination of licensing basis, approval of the list and reference plant
- Determination of records and reports to be kept during the review and assessment process
- Identification of documents for each application and providing guidance on format and content of each
- Establishing minimum quality requirements for the applications
- Determining the scope and depth of review and assessment
- Establishing review and assessment guidelines for RB staff

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2013-2015

- Review and approval of Updated Site Report
 - Updated Site Report: Update the 1976 report that established a basis for Akkuyu Site License with new understanding of safety and the new project
- Identifying the areas and the scope of need for TSO
- Procuring the technical support services
- Performing regulatory inspection on site investigations
- Establishing the framework for regulatory control over manufacturing of equipment

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2016-2018

- Review and approval of site related design parameters
- Using the lessons learned to improve local processes
 - Revision of inspection procedures based on inspection practices on site investigation
 - Revision of review and assessment guideline based on the review of updated site report
- Establishing an issue tracking system including formal records of additional information requests
- Review and assessment of Construction license for the first unit
- Granting the first construction license to ANS units
- Review and assessment for manufacturing activities, inspection of initiated manufacturing

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2019-2023

- Transition to new regulatory body NDK
- Review and assessment of construction license applications for the second, third and fourth units
- Granting construction licenses
- Extensive on-site inspection of construction and manufacturing activities
- Continuing with the resolving open issues through ARIs
- IRRS mission to Türkiye in Sept. 2022, preparations starting earlier
- Review and assessment of commissioning permit for Unit 1

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THE END...

Thanks for your patience!...

