

HUMAN RESOURCE DEVELOPMENT FOR NINH THUAN NPP 1 PROJECT

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*Organization and Human Resource Department
Vietnam Electricity*



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NINH THUAN NPP PROJECT: BRIEF OVERVIEW

Ninh Thuan Nuclear Power Project

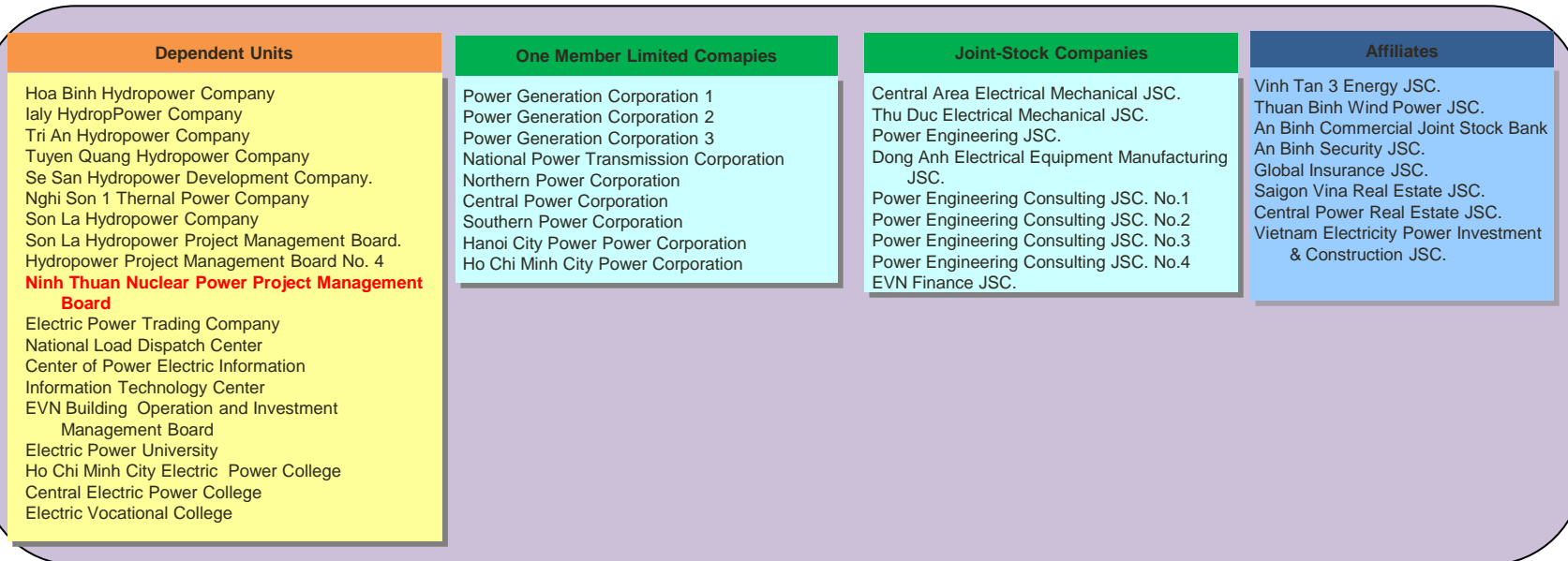
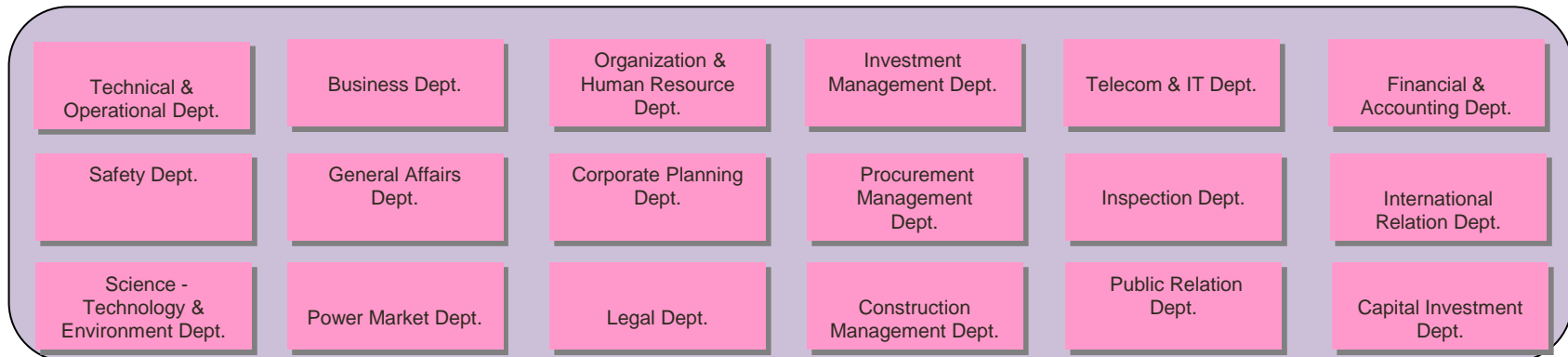
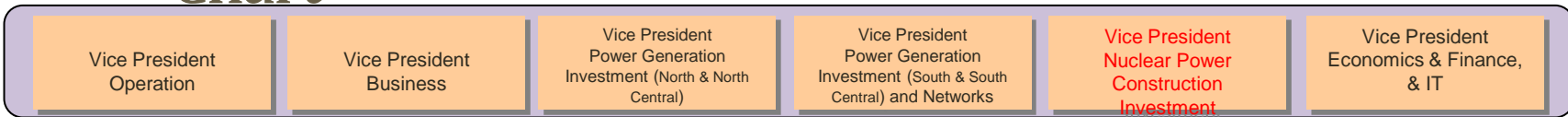
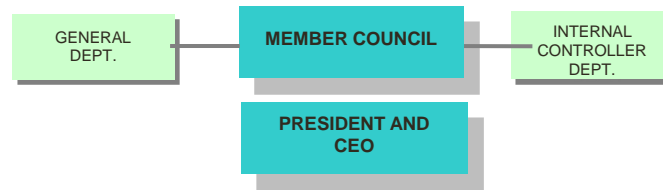


- **Ninh Thuan 1:**
- Site: Phuoc Dinh commune
- 2 x 1,000 Mwe
- Investment Owner/Operator: **EVN**
- Technology: **Advanced & proven (LWR)**
- Cooling: **Sea water**

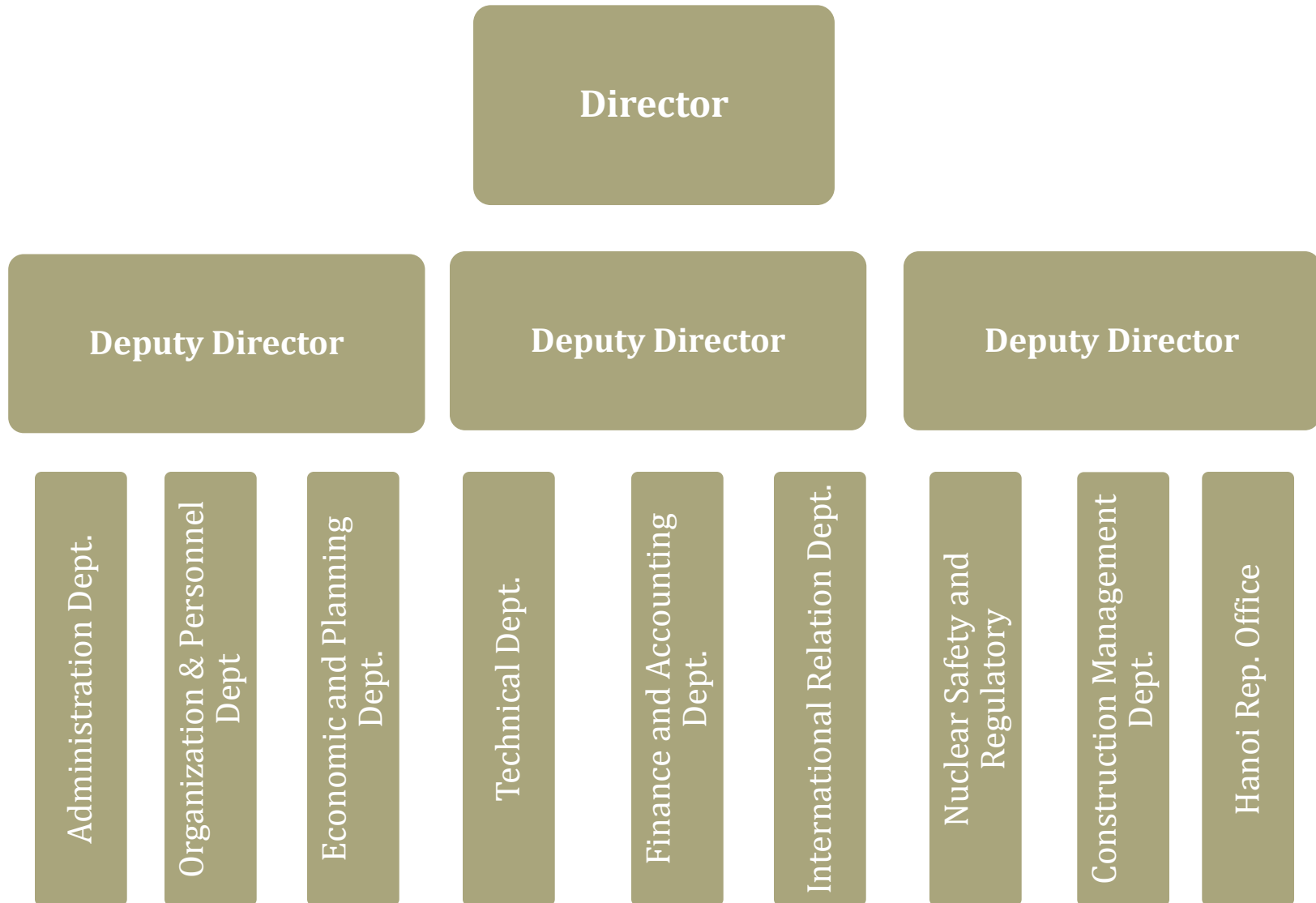
■ Ninh Thuan 2

- Site: Vinh Hai comu – Ninh Hai Dist – NinhThuan.
- Capacity: approx 2 x 1000 MW

EVN Organization Chart



EVNNPB Organization Chart (Current)



WORKFORCE PLANNING

EVNNPB Organization Chart (at peak time-plan)

Total: 400 staff

DIRECTOR
GENETAL (1)

DEPUTY DIRECTOR GENERALS (5)

Administration Dept. (30)

Organization and Personnel Dept. (10)

Finance and Accounting Dept. (10)

Technical Dept. (40)

Economic – Planning Dept. (15)

International Relation Dept. (10)

Public Relation Dept. (15)

Material and Equipment Dept. (15)

Construction Management Dept. (20)

Nuclear Safety and Regulation Dept. (15)

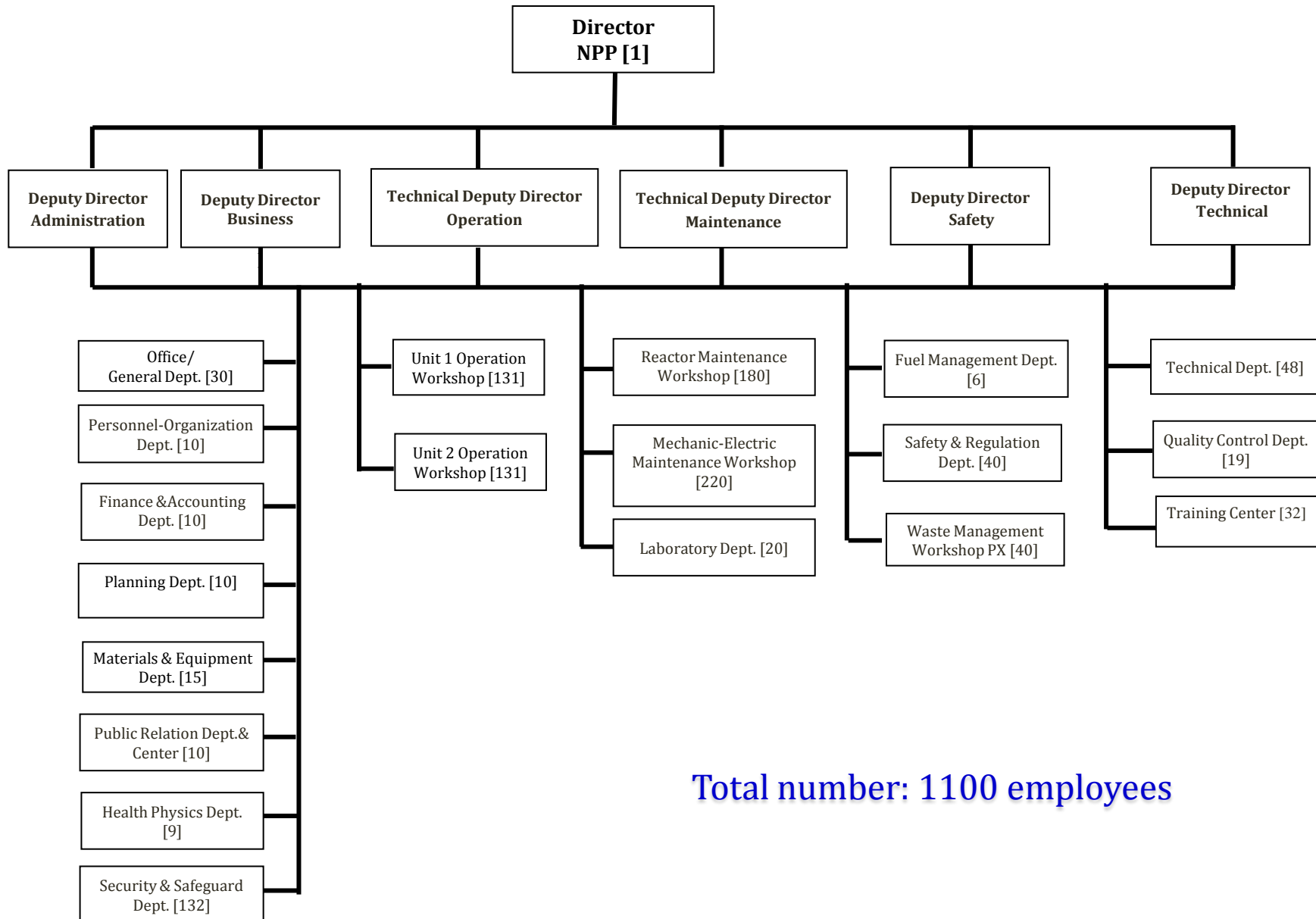
Quality Assurance and Quality Control Dept. (15)

HR Management and Development Dept. (10)

Hanoi Office (15)

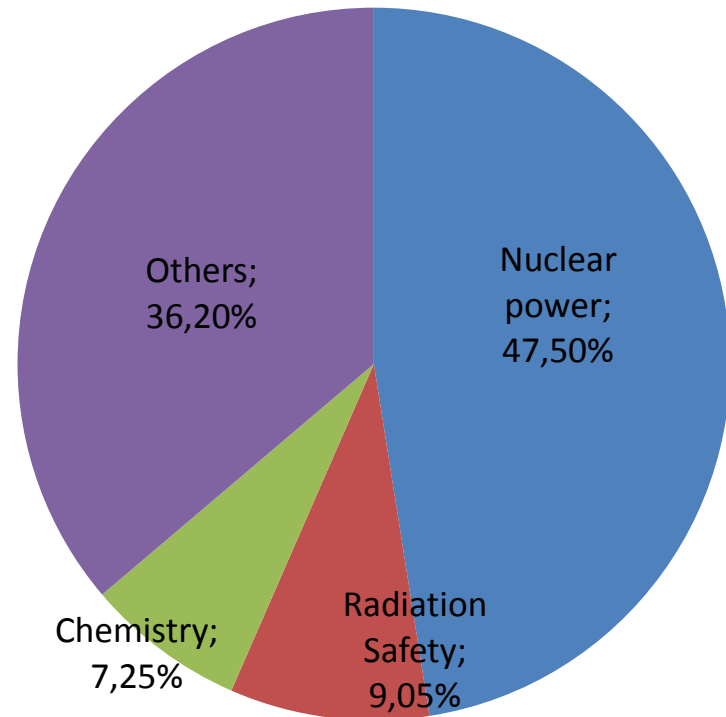
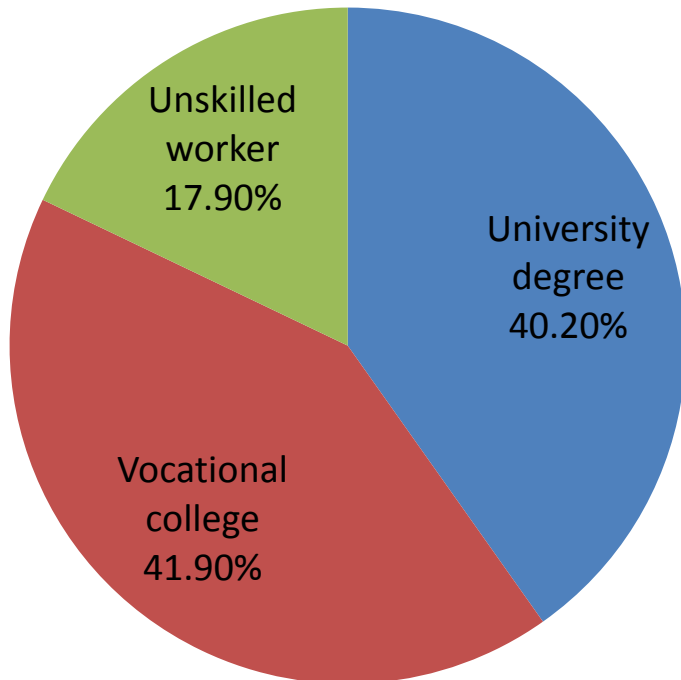
Pre-Generation Board (180)

Organization Chart of Ninh Thuan NPP (2x1000MW) (Plan)



WORKFORCE IN THE OPERATOR ORGANIZATION

By education level

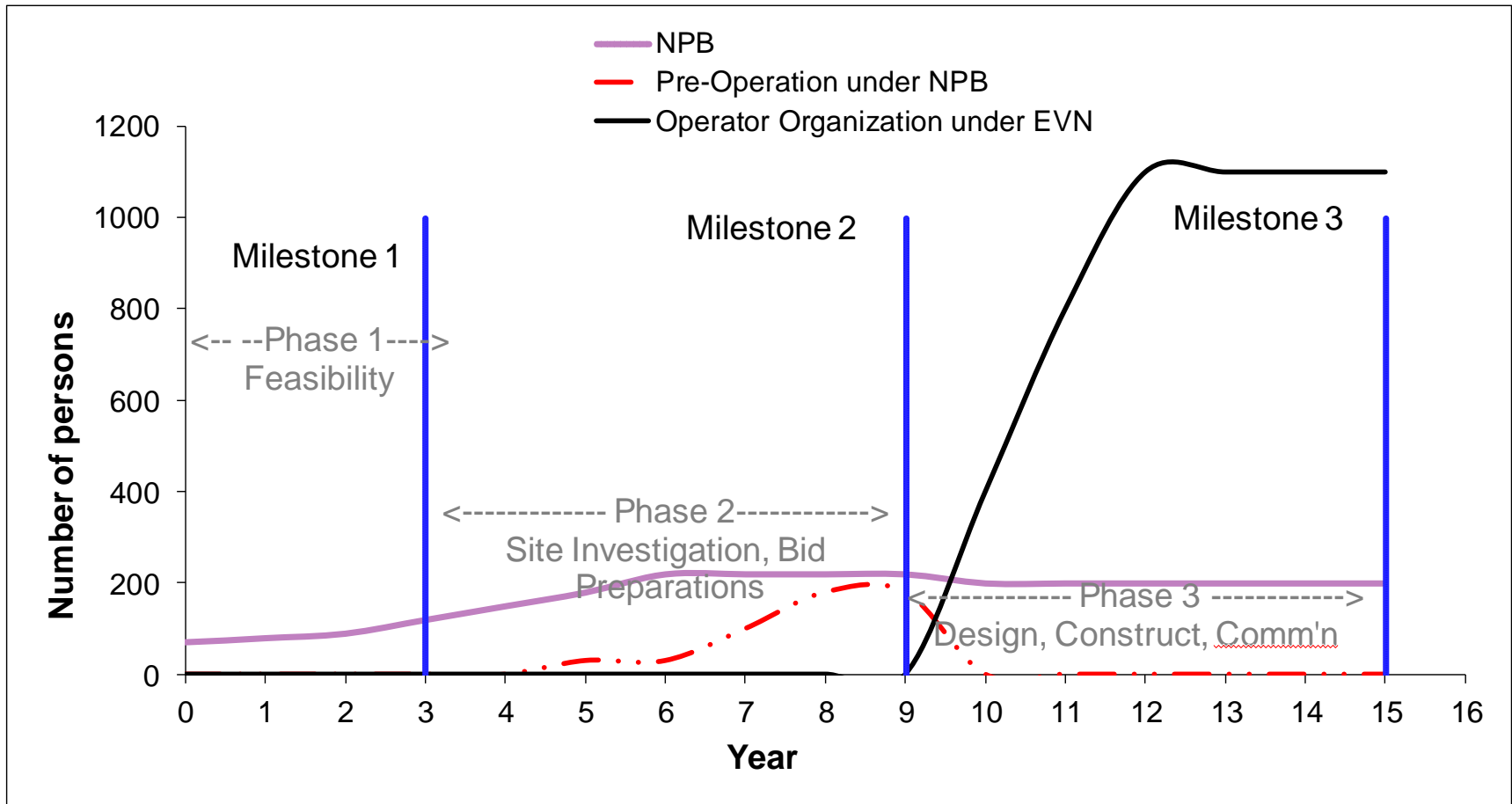


University degree disciplines

Education requirement

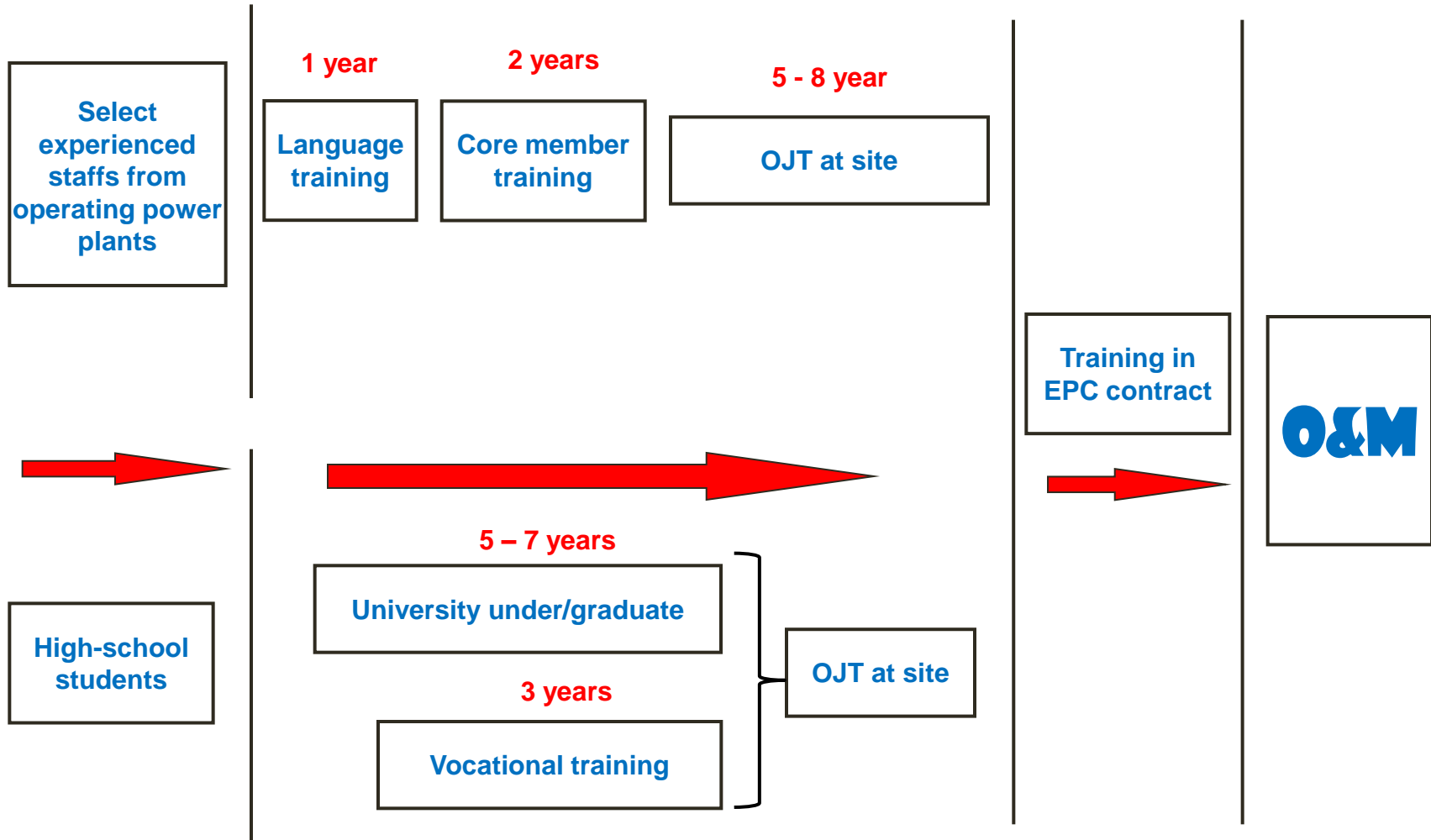
	Quantity	Place	Field of study
University degree	442		
	282	<i>Russia</i>	<i>Nuclear-related fields</i>
	160	<i>Vietnam</i>	<i>Electric, mechanic, automation, IT...</i>
Vocational training	461	Vietnam	Electric, mechanic, chemistry...
Unskilled worker	197		
Total	1100		

Staffing Schedule



EDUCATION AND TRAINING

Education and Training flow chart



Attract excellent students



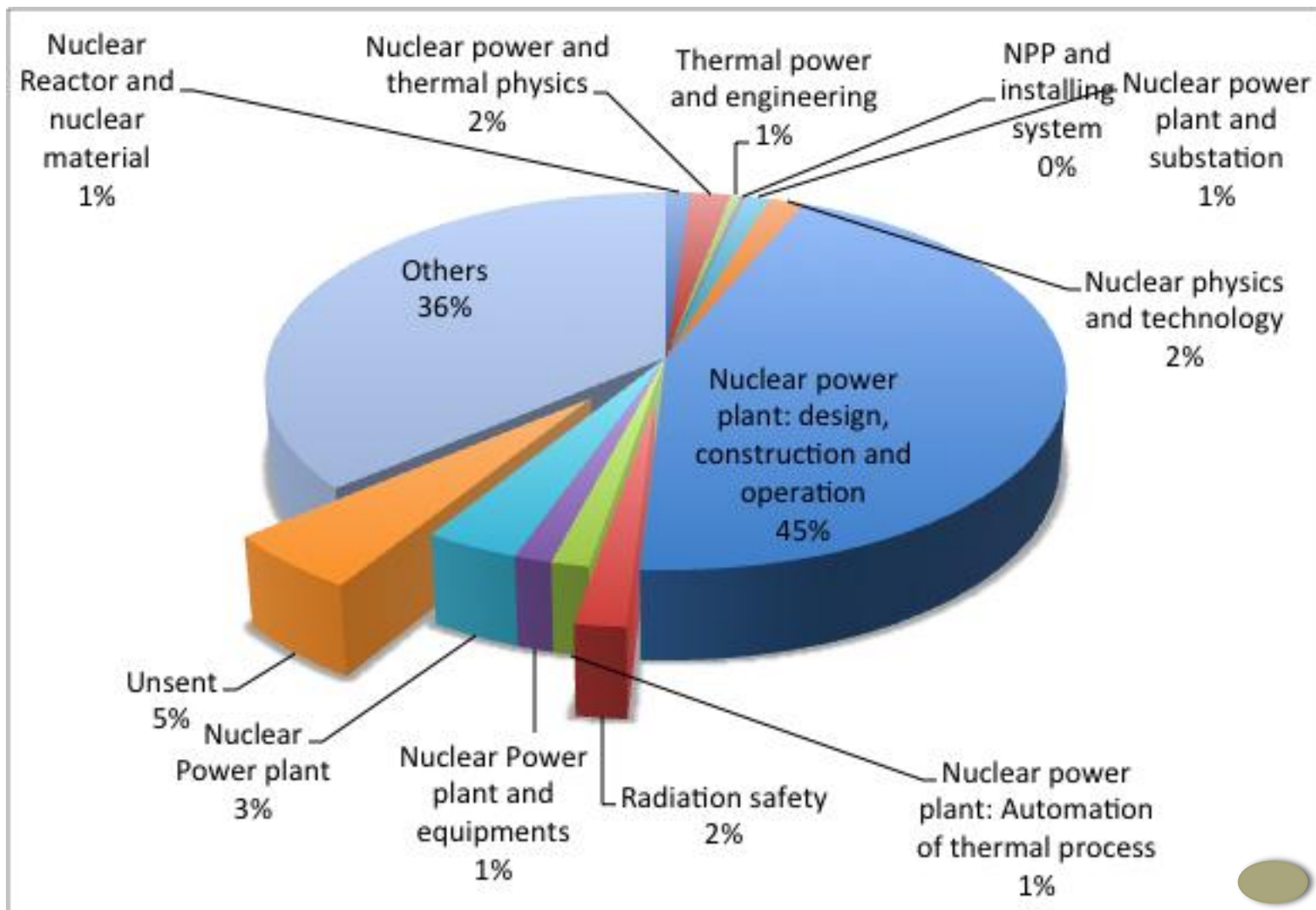
- Annually, EVN organize a trip to Ninh Thuan and adjacent provinces to attract new students apply to study nuclear.
- Target to: final grade of high school
- Contents:
 - Nuclear and Nuclear safety
 - Ninh Thuan NPP project
 - Scholarship scheme to study nuclear in Russia
 - Commitment

University Education in Russia

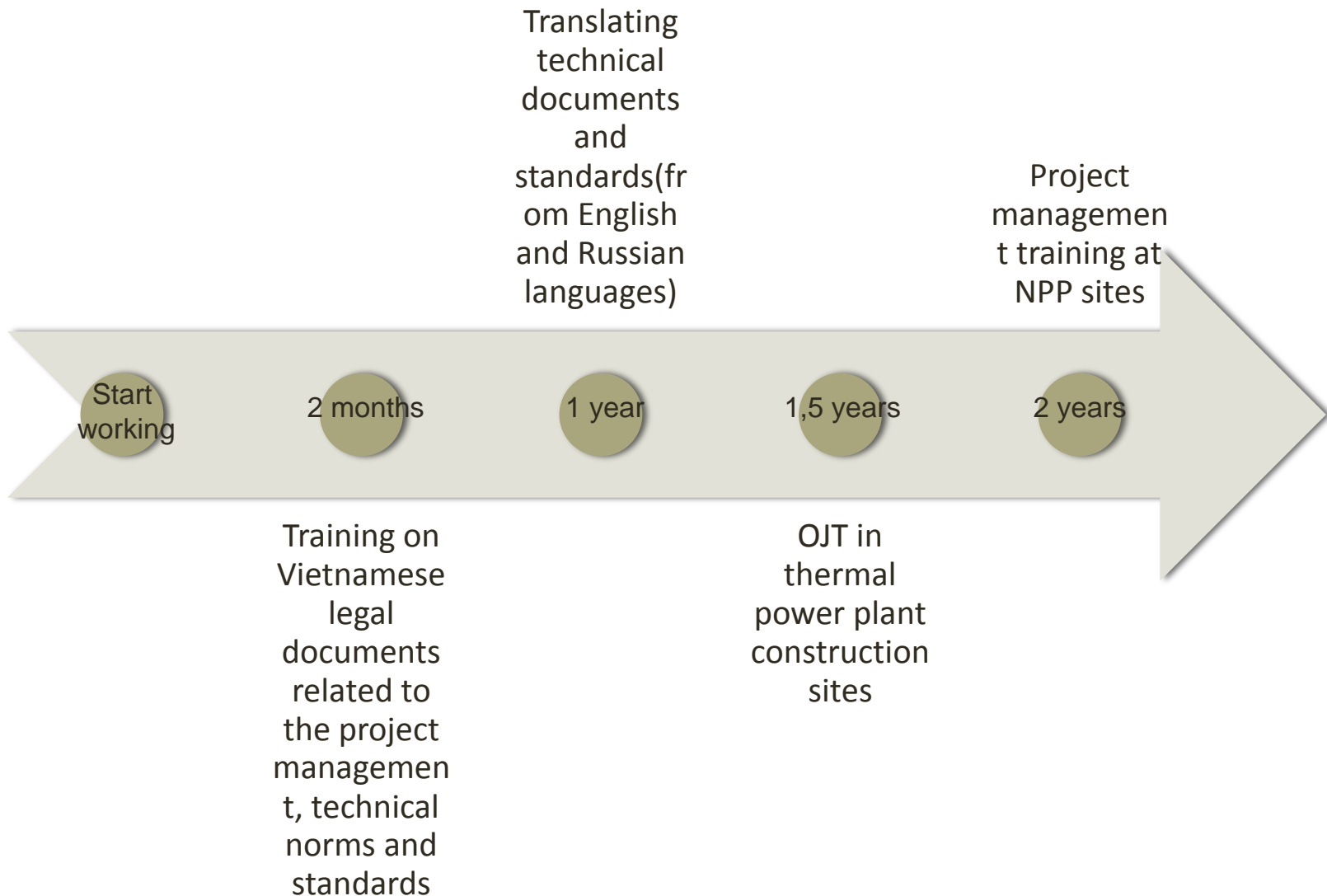
Year of sending	Quantity	Major – University (Country)	Degree	Year of graduate
2006	9	Nuclear Power – MPEI (Rus.)	MSc	2013
2007	5	Nuclear Power – MPEI (Rus.)	MSc	2014
2008	11	Nuclear Power – MPEI (Rus.)	MSc	2015
2009	4	Nuclear Power – MPEI (Rus.)	MSc	2016
2010 (MOET)	20	NPP and Instal. – MEPHI (Rus.)	Specialist	2017
2011 (MOET)	51		Specialist	2018
2012 (MOET)	39	NPP and Instal. – MEPHI (Rus.)	Specialist	2019
2013 (MOET)	60	Nuclear related specialties (Rus.)	Specialist	2020
2014 (MOET)	65	Nuclear related specialties (Rus.)	Specialist	2021
Total	264			
Study halt	4			
Training need	22			

Various disciplines for NPP

SPECIALTIES	Number of students
Nuclear Reactor and nuclear material	5
Nuclear power and thermal physics	8
Thermal power and engineering	2
NPP and installing system	1
Nuclear power plant and substation	5
Nuclear physics and technology	7
Nuclear power plant: design, construction and operation	197
Radiation safety	8
Nuclear power plant: Automation of thermal process	6
Nuclear Power plant and equipments	6
Nuclear Power plant	15
TOTAL	260



Follow-up activities for newly graduated students



Training Plan (1)

#	Targeted audience	Training contents	Duration	No. of trainees	Venue
I	General training course				
1	All staffs related to the project	Nuclear Power Basics	1 month	750	Vietnam
II	Training for managers, consulting firms				
2	Management personnel of EVNNPB, EVN and consulting firms	Knowledge relates to nuclear power project management	1/2 month	70	Oversea
3	Staff of technical department and construction management department of EVNNPB	Provide knowledge on thermal power, on the job training at the thermal power project management board	3 months	20	Vietnam
4	EVNNPB staff	Advanced training on project management (minimum 50%OJT)	3 months	40	Oversea
5	Consulting firms, staff of EVNNPB	Training design consultant, supervision consultant (minimum 50% OJT)	6 months	10	Oversea

Training Plan (2)

#	Targeted audience	Training contents	Duration	No. of trainees	Venue
III	Training for O&M (EPC contract)				
IV	Training for EVN's University and colleges*				
10	Lecturers	Professional courses and/or research at universities	3 months	30	Oversea
11	Lecturers	Master/PhD on nuclear related fields	2-3 years	6	Oversea

Short-term training

Place	Quantity	Contents	Targeted group
Vietnam	1599	Basics knowledge related on nuclear power and NPPs	Project staff, stakeholders
Japan	312	Basics, Legal, Safety, site selection, FS, planning, project management, licensing	Various from project staff to higher level
Korea	22	NPP project management	Project staff and EVN HO
France	20	Introduction to NPP	Managers
Russia	37	Nuclear Island, HR	Project staff and EVN HO

RISK MANAGEMENT

Risk Analysis

Risk 1: Shortage in required manpower for the project

- Experienced and competent persons donot choose to work for the project.
- Outstanding students don't choose to follow nuclear power fields. Or the university could not supply adequate students for the project to recruit.

Risk 2: Recruited personnel or the trained staffs are not competent enough to meet the work requirement

- Wrong competency definition of certain position.
- Could not attract well-experienced staffs to work for the project or outstanding students to follow nuclear field.

Risk 3: The workforce plan and training plan is not appropriate

- No experience in workforce and training planning for a NPP project.
- Changes in national policy or legal framework; changes in the project (technology, schedule...)

Risk 4: Training oversea is not as efficient as needed

- Language constrain
- Cultural shock and cultural difference
- Change in the mood of trainees
- Limited information provided because of the sensitivity of the nuclear power field

Risk Mitigation

Risk 1: Shortage in required manpower for the project

- The policy and mechanism to give more incentives to people working and studying nuclear power should have clear guideline for implementation.
- Increase public communication about nuclear power to get public acceptance and awareness on nuclear power.

Risk 2: Recruited personnel or the trained staffs are not competent enough to meet the work requirement

- Close cooperation with vendor to review and revise the competency description for each position.
- Regular monitoring and evaluating the training efficiency.
- Focus on OJT.
- Develop Knowledge Management system.

Risk 3: The workforce plan and training plan is not appropriate

- Regular review and revise the manpower and training plan in response to changes of the project.
- Close cooperation with EPC contractor during project implementation.

Risk 4: Training overseas is not as efficient as needed

- Adequate language training for trainees to study overseas.
- Introduction of the destination country culture should be given to the trainees.
- Carefully select trainees with good attitude (eg. eager for discovering new technology, for being promoted...)
- Detailed training program should be discussed and agreed with the contractor.

REQUEST FOR FURTHER SUPPORT FROM ROSATOM

Conclusion

EVN need further support from Rosatom to:

- Determine specific specialization of the students studying in Russia to assure that we will have the right number of the right person for the Ninh Thuan NPP No 1.
- Determine training plan for project management staff in preparation for coming construction period. OJT is required so we need to cooperate with specific similar technology NPP construction site in Russia
- Determine further detail for the training plan for: managerial staff, O&M (key staffs, technician etc).

THANK YOU FOR YOUR ATTENTION!