

Appendix-1

Project Design Matrix (PDM)

Project Design Matrix (PDM) Version 1

PDM: Electric Power Technical Standards Promotion Project in Vietnam

Duration: 3 Years (*March in 2010 to January in 2013*)

Implementation Institutions: Ministry of Industry and Trade, Ministry of Construction, Vietnam Electricity (and other concerned institutions)

Target Area: The Whole Vietnam

Direct Target Group: Working Groups

In-direct Target Group: Electric Power Industry in Vietnam

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal: Improve reliability and safety of power supply by means of decreasing electric power disorders caused by failures in design, construction, operation and maintenance through disseminating Technical Standards to electric power industry in Vietnam.</p>	<p>1. Numbers of occurrence in failure and power outage of electric power supply are decreased.</p>	<p>1. MOIT/EVN/MOC failure report</p>	
<p>Project Purpose: Electric power Technical Standards will be enacted and operated effectively and efficiently through disseminating Technical Standards and Guidelines to electric power industry in Vietnam.</p>	<p>1. Numbers of Technical Standards and Guidelines approved as ministerial circulars or codes 2. Numbers of participants/participating companies to workshop for dissemination 3. Degree of satisfaction to Technical Standards and Guidelines by technical staff in electric power industry</p>	<p>1. Ministerial circular notice/Gazette 2. Project record 3. Questionnaire survey</p>	<ul style="list-style-type: none"> Government policy on the electric power Technical Standards will not be changed drastically.
<p>Outputs: 1. Report of review on existing Technical Standards will be developed. 2. Technical Standards will be revised and developed. 3. Guidelines for Technical Standards will be developed.</p>	<p>1. The report is approved by JMCs 2.1 Technical Standards are timely approved by JMCs 2.2 Technical Standards include contents required by the Vietnamese side. 3.1 Guidelines for Technical Standards are approved by JMCs 3.2 Guidelines for Technical Standards include contents required by the Vietnamese side.</p>	<p>1. Project record 2.1 Project record 2.2 Project record 3.1 Project record 3.2 Project record</p>	<ul style="list-style-type: none"> Technical Standards are enacted as ministerial circulars or codes as planned. Appropriate budget of the Vietnamese side for disseminating Technical Standards is secured.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Activities:</p> <p>1.1 Collect existing Technical Standards, related documents and information</p> <p>1.2 Review existing Technical Standards and related documents</p> <p>1.3 Develop the report of review on inconsistency of existing Technical Standards and the resultant problems, and the necessities for improvement</p> <p>2.1 Develop new Technical Standards by Working Groups (“WGs”)</p> <ul style="list-style-type: none"> • <u>WG: Hydro 2</u> (Under MOC): Design, Construction, Completion Inspection • <u>WG: Thermal</u> (Under MOIT): Design for Large-scaled Coal-fired Plant & Gas-combined Cycle <p>2.2 Make revision and addition into the existing Technical Standards by WGs</p> <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Thermal</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Network</u> (Under MOIT): Vol. 1-7 (including Grounding & Lightening Protection) <p>3.1 Prepare framework of Guidelines based on revised and developed Technical Standards by WGs</p> <p>3.2 Develop Guidelines by WGs</p> <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) • <u>WG: Hydro 2</u> (Under MOC) • <u>WG: Thermal</u> (Under MOIT) • <u>WG: Network</u> (Under MOIT) 	<p style="text-align: center;">Inputs: Vietnamese Side</p> <p><Personnel Inputs ></p> <ul style="list-style-type: none"> • Joint Management Committee • Technical Working Groups <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) MOC Expert X 1 person 3) MOST Expert X 1 Person 4) EVN Science, Technology & Environment X 1 person 5) EVN Productive Technical Engineer X 1 person • <u>WG: Hydro 2</u> (Under MOC) <ol style="list-style-type: none"> 1) MOC Expert X 1-2 persons 2) MOIT Expert X 1 person 3) MOST Expert X 1 Person 4) EVN Science, Technology & Environment X 1 person 5) EVN Design Engineer X 1 person 6) MARD (HQ) X 1 person • <u>WG: Thermal</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) MOST Expert X 1 Person 3) EVN Productive Technical Engineer X 1-2 persons 4) Power Plant Productive Technical Engineer (in principle from Plant) X 1 person • <u>WG: Network</u> (Under MOIT): <ol style="list-style-type: none"> 1) MOIT Expert X 3 persons 2) MOST Expert X 1 Person 3) EVN Science, Technology & Environment X 1 person 4) EVN Productive Technical Engineer X 1 person <p><Building & Facilities></p> <ul style="list-style-type: none"> • Project Office Space for Japanese Experts <p><Administration Cost ></p> <ul style="list-style-type: none"> • Necessary cost for hiring consultants supporting JICA Experts • Necessary cost for activities of WG Members (from MOIT & MOC respectively) 	<p style="text-align: center;">Inputs: Japanese Side</p> <p><Dispatch of Experts></p> <p><Long-term Expert></p> <ul style="list-style-type: none"> • Chief Advisor <p><Short-term Expert></p> <ul style="list-style-type: none"> • Hydro (civil engineering, electrical) • Thermal (mechanical, electrical) • Network (transmission, substation, distribution) <p><Technical Training in Japan></p> <p>< Workshops></p> <p><Cost></p> <ul style="list-style-type: none"> • Necessary cost for hiring consultants supporting JICA experts <p>< Machinery and Equipment></p> <ul style="list-style-type: none"> • Other machinery such as vehicles and equipment to be agreed mutually upon as necessary for the implementation of the Project 	<ul style="list-style-type: none"> • WGs and JMCs smoothly function as expected. <hr/> <p>Pre-conditions:</p> <ul style="list-style-type: none"> • Project Purpose and necessary commitment for the Inputs are understood and secured.

Abbreviation:
 WG: Working Groups, JMC: Joint Management Committee

Project Design Matrix (PDM) Version 2

Project Title: Electric Power Technical Standards Promotion Project in Vietnam

Executing Agencies: Ministry of Industry and Trade (MOIT), Ministry of Construction (MOC), Vietnam Electricity (EVN), (and other organizations concerned)

Target Area: Vietnam

Target Group: Electric power industries in Vietnam

Project Period: Three Years from March, 2010 to June 2013

Version Number: PDM Ver. 2

Date: May 16, 2012

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal: The Electric Power Technical Standards and Guidelines shall be enforced to ensure improvement of reliability and safety of power supply in Vietnam.</p>	<p>(Details will be specified in the terminal evaluation.)</p> <ol style="list-style-type: none"> 1. The Electric Power Technical Standards and Guidelines under MOIT are promulgated by the end of 2014. 2. The Technical Guidelines concerning civil works of hydropower plants under MOC is promulgated by the end of 2014. 3. Designs of newly constructed electric power facilities are permitted according to the Electric Power Technical Standards and Guidelines. 4. Completion inspections of newly constructed electric power facilities are conducted according to the Electric Power Technical Standards and Guidelines. 5. Regular inspections on operation and maintenance of electric power facilities are conducted and reported by operators to MOIT according to the Electric Power Technical Standards and Guidelines. 	<p>(Details will be specified in the terminal evaluation.)</p> <ol style="list-style-type: none"> 1. Documents of MOIT 2. Documents of MOC 	
<p>Project Purpose: The Electric Power Technical Standards and Guideline are authorized by the Vietnamese authorities.</p>	<ol style="list-style-type: none"> 1. The final draft of the Electric Power Technical Standards in the scope of MOIT is approved by JMC by June 2013. 2. The final draft of the Electric Power Technical Guidelines in the scope of MOIT is approved by JMC by June 2013. 3. The Technical Standards concerning civil works of hydropower plants in the scope of MOC is promulgated by the end of 2012. 4. The final draft of Technical Guidelines concerning civil works of hydropower plants in the scope of MOC is approved by JMC by June 2013. 	<ol style="list-style-type: none"> 1. Minutes of Meeting on JMC 2. Minutes of Meeting on JMC 3. Official documents of MOC 4. Minutes of Meeting on JMC 	<ul style="list-style-type: none"> • Government policy concerning the Electric Power Technical Regulations will be remained.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Outputs:</p> <ol style="list-style-type: none"> 1. Report of review on existing Technical Standards is developed. 2. Drafts of the Technical Standards are developed. 3. Drafts of the Guidelines for Technical Standards are developed. 	<ol style="list-style-type: none"> 1. The report is approved by JMCs by July, 2010. 2.1. The final drafts of the Electric Power Technical Standards in English are submitted to JMC by August, 2011. 2.2 The final draft of the Technical Standards of the MOIT scope in Vietnamese is refined by the MOIT expert team by May, 2013. 2.3 The final draft of the Technical Standards of the MOC scope in Vietnamese is refined by the MOC expert team by June, 2012. 3.1 The final drafts of the Electric Power Technical Guidelines are submitted to JMC by May, 2013. 3.2 The final draft of the Technical Guidelines of the MOIT scope is refined by the MOIT expert team by the end of May, 2013. 3.3 The final draft of the Technical Guidelines of the MOC scope is refined by the MOC expert team by the end of May, 2013. 	<ol style="list-style-type: none"> 1. Minutes of meeting on JMC 2.1 Project record 2.2 Project record 3.1 Project record 3.2 Project record 	<ul style="list-style-type: none"> •
<p>Activities:</p> <ol style="list-style-type: none"> 1.1 Collect existing Technical Standards, related documents and information 1.2 Review existing Technical Standards and related documents 1.3 Develop the report of review on inconsistency of existing Technical Standards and the resultant problems, and the necessities for improvement 2.1 Develop new Technical Standards by Working Groups (“WGs”) <ul style="list-style-type: none"> • <u>WG: Hydro 2</u> (Under MOC): Design, Construction, Completion Inspection for hydropower civil works • <u>WG: Thermal</u> (Under MOIT): Design for Large-scaled Coal-fired Plant & Gas-combined Cycle 2.2 Make revision and addition into the existing Technical Standards by WGs <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Thermal</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Network</u> (Under MOIT): Vol. 1-7 (including Grounding & Lightening Protection) 2.3 Review the final drafts of Technical Standards in English and Vietnamese comprehensively 3.1 Prepare framework of Guidelines based on revised and developed Technical Standards by WGs 3.2 Develop Guidelines by WGs <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) • <u>WG: Hydro 2</u> (Under MOC) 	<p style="text-align: center;"><u>Inputs: Vietnamese Side</u></p> <p><Personnel Inputs ></p> <ul style="list-style-type: none"> • Joint Management Committee • Technical Working Groups <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) MOC Expert X 1 person 3) EVN Science, Technology & Environment X 1 person 4) EVN Productive Technical Engineer X 1 person • <u>WG: Hydro 2</u> (Under MOC) <ol style="list-style-type: none"> 1) MOC Expert X 1-2 persons 2) MOIT Expert X 1 person 3) EVN Science, Technology & Environment X 1 person 4) EVN Design Engineer X 1 person 5) MARD (HQ) X 1 person • <u>WG: Thermal</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) EVN Productive Technical Engineer X 1-2 persons 3) Power Plant Productive Technical Engineer (in principle from Plant) X 1 person 	<p style="text-align: center;"><u>Inputs: Japanese Side</u></p> <p><Dispatch of Experts></p> <p><<u>Long-term Expert</u>></p> <ul style="list-style-type: none"> • Chief Advisor <p><<u>Short-term Expert</u>></p> <ul style="list-style-type: none"> • Hydro (civil engineering, electrical) • Thermal (mechanical, electrical) • Network (transmission, substation, distribution) <p><Technical Training in Japan></p> <p>< Workshops></p> <p><Cost></p> <ul style="list-style-type: none"> • Necessary cost for hiring consultants supporting JICA experts <p>< Machinery and Equipment></p> <ul style="list-style-type: none"> • Other machinery such as vehicles and equipment to be agreed mutually upon as necessary for the implementation of the Project 	<p style="text-align: center;"><u>Pre-conditions:</u></p> <ul style="list-style-type: none"> • Project Purpose and necessary commitment for the Inputs are understood and secured.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<ul style="list-style-type: none"> • <u>WG: Thermal</u> (Under MOIT) • <u>WG: Network</u> (Under MOIT) <p>3.3 Review the drafts of Technical Guidelines in English and Vietnamese comprehensively</p>	<ul style="list-style-type: none"> • <u>WG: Network</u> (Under MOIT): <ol style="list-style-type: none"> 1) MOIT Expert X 3 persons 2) EVN Science, Technology & Environment X 1 person 3) EVN Productive Technical Engineer X 1 person • Expert team (MOIT) • Expert team (MOC) <p><Building & Facilities></p> <ul style="list-style-type: none"> • Project Office Space for Japanese Experts <p><Administration Cost ></p> <ul style="list-style-type: none"> • Necessary cost for activities of WG Members (from MOIT & MOC respectively) 		

Abbreviation: WG: Working Groups, JMC: Joint Management Committee

Project Design Matrix (PDM) Version 3

Project Title: Electric Power Technical Standards Promotion Project in Vietnam

Executing Agencies: Ministry of Industry and Trade (MOIT), Ministry of Construction (MOC), Vietnam Electricity (EVN), (and other organizations concerned)

Target Area: Vietnam

Target Group: Electric power industries in Vietnam

Project Period: Three Years from March, 2010 to June 2013

Version Number: PDM Ver. 3

Date: April 24, 2013

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal: The Electric Power Technical Regulations and Guidelines shall be enforced to ensure improvement of reliability and safety of power supply in Vietnam.</p>	<ol style="list-style-type: none"> 1. The Electric Power Technical Regulations under MOIT are promulgated by the end of 2014. 2. The Electric Power Technical Guidelines under MOIT are disseminated through website, workshops, distribution of booklets, etc. by the end of 2014. 3. The Technical Guidelines concerning civil works of hydropower plants under MOC are disseminated through website, workshops, distribution of booklets, etc. by the end of 2014. 4. Compliance of the Technical Regulations and utilization of the Technical Guidelines are checked by the following points: <ul style="list-style-type: none"> - No. of approved large-scale project after the promulgation of the Technical Regulations, - No. of completion inspection reports to a committee concerned and No of order for improvement, - Internal operational regulations according to the Technical Regulations prepared by facilities owned by EVN and other operators. 	<p>The indicators can be verified by the following means:</p> <ol style="list-style-type: none"> 1. Documents and records of MOIT 2. Documents and records of MOC 3. Internal regulations of EVN and their subsidiaries, other operators 4. Questionnaire survey to EVN and their subsidiaries, other operators 5. Sample site visits of power facilities owned by EVN and other operators 	
<p>Project Purpose: The Electric Power Technical Regulations and Guideline are authorized by the Vietnamese authorities.</p>	<ol style="list-style-type: none"> 1. The final draft of the Electric Power Technical Regulations in the scope of MOIT is approved by JMC by June 2013. 2. The final draft of the Electric Power Technical Guidelines in the scope of MOIT is approved by JMC by June 2013. 3. The Technical Regulations concerning civil works of hydropower plants in the scope of MOC is promulgated by the end of 2012. 	<ol style="list-style-type: none"> 1. Minutes of Meeting on JMC 2. Minutes of Meeting on JMC 3. Official documents of MOC 4. Minutes of Meeting on JMC 	<ul style="list-style-type: none"> • Government policy concerning the Electric Power Technical Regulations will be remained.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
	<p>4. The final draft of Technical Guidelines concerning civil works of hydropower plants in the scope of MOC is approved by JMC by June 2013.</p>		
<p>Outputs:</p> <ol style="list-style-type: none"> 1. Report of review on existing Technical Regulations is developed. 2. Drafts of the Technical Regulations are developed. 3. Drafts of the Guidelines for Technical Regulations are developed. 	<ol style="list-style-type: none"> 1. The report is approved by JMCs by July, 2010. 2.1. The final drafts of the Electric Power Technical Regulations in English are submitted to JMC by August, 2011. 2.2. The final draft of the Technical Regulations of the MOIT scope in Vietnamese is refined by the MOIT expert team by May, 2013. 2.3. The final draft of the Technical Regulations of the MOC scope in Vietnamese is refined by the MOC expert team by June, 2012. 3.1. The final drafts of the Electric Power Technical Guidelines are submitted to JMC by May, 2013. 3.2. The final draft of the Technical Guidelines of the MOIT scope is refined by the MOIT expert team by the end of May, 2013. 3.3. The final draft of the Technical Guidelines of the MOC scope is refined by the MOC expert team by the end of May, 2013. 	<ol style="list-style-type: none"> 1. Minutes of meeting on JMC 2.1 Project record 2.2 Project record 3.1 Project record 3.2 Project record 	<ul style="list-style-type: none"> •
<p>Activities:</p> <ol style="list-style-type: none"> 1.1 Collect existing Technical Regulations, related documents and information 1.2 Review existing Technical Regulations and related documents 1.3 Develop the report of review on inconsistency of existing Technical Regulations and the resultant problems, and the necessities for improvement 2.1 Develop new Technical Regulations by Working Groups (“WGs”) <ul style="list-style-type: none"> • <u>WG: Hydro 2</u> (Under MOC): Design, Construction, Completion Inspection for hydropower civil works • <u>WG: Thermal</u> (Under MOIT): Design for Large-scaled Coal-fired Plant & Gas-combined Cycle 2.2 Make revision and addition into the existing Technical Regulations by WGs <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Thermal</u> (Under MOIT): Vol. 5 & 6 	<p style="text-align: center;">Inputs: Vietnamese Side</p> <p><Personnel Inputs ></p> <ul style="list-style-type: none"> • Joint Management Committee • Technical Working Groups <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) MOC Expert X 1 person 3) EVN Science, Technology & Environment X 1 person 4) EVN Productive Technical Engineer X 1 person • <u>WG: Hydro 2</u> (Under MOC) <ol style="list-style-type: none"> 1) MOC Expert X 1-2 persons 2) MOIT Expert X 1 person 3) EVN Science, Technology & 	<p style="text-align: center;">Inputs: Japanese Side</p> <p><Dispatch of Experts></p> <p><Long-term Expert></p> <ul style="list-style-type: none"> • Chief Advisor <p><Short-term Expert></p> <ul style="list-style-type: none"> • Hydro (civil engineering, electrical) • Thermal (mechanical, electrical) • Network (transmission, substation, distribution) <p><Technical Training in Japan></p> <p>< Workshops ></p>	<p style="text-align: center;">Pre-conditions:</p>

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<ul style="list-style-type: none"> • <u>WG: Network</u> (Under MOIT): Vol. 1-7 (including Grounding & Lightning Protection) <p>2.3 Review the final drafts of Technical Regulations in English and Vietnamese comprehensively</p> <p>3.1 Prepare framework of Guidelines based on revised and developed Technical Regulations by WGs</p> <p>3.2 Develop Guidelines by WGs</p> <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) • <u>WG: Hydro 2</u> (Under MOC) • <u>WG: Thermal</u> (Under MOIT) • <u>WG: Network</u> (Under MOIT) <p>3.3 Review the drafts of Technical Guidelines in English and Vietnamese comprehensively</p>	<p>Environment X 1 person</p> <p>4) EVN Design Engineer X 1 person</p> <p>5) MARD (HQ) X 1 person</p> <ul style="list-style-type: none"> • <u>WG: Thermal</u> (Under MOIT) <ul style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) EVN Productive Technical Engineer X 1-2 persons 3) Power Plant Productive Technical Engineer (in principle from Plant) X 1 person • <u>WG: Network</u> (Under MOIT): <ul style="list-style-type: none"> 1) MOIT Expert X 3 persons 2) EVN Science, Technology & Environment X 1 person 3) EVN Productive Technical Engineer X 1 person <ul style="list-style-type: none"> • Expert team (MOIT) • Expert team (MOC) <p><Building & Facilities></p> <ul style="list-style-type: none"> • Project Office Space for Japanese Experts <p><Administration Cost ></p> <ul style="list-style-type: none"> • Necessary cost for activities of WG Members (from MOIT & MOC respectively) 	<p><Cost></p> <ul style="list-style-type: none"> • Necessary cost for hiring consultants supporting JICA experts <p>< Machinery and Equipment ></p> <ul style="list-style-type: none"> • Other machinery such as vehicles and equipment to be agreed mutually upon as necessary for the implementation of the Project 	<ul style="list-style-type: none"> • Project Purpose and necessary commitment for the Inputs are understood and secured.

Abbreviation: WG: Working Groups, JMC: Joint Management Committee

Appendix-2

Plan of Operation (PO)

Plans of Operation (PO) for Electric Power Technical Standards Promotion in Vietnam (Original)

Calendar Year		2010/2011				2011/2012				2012/2013				Person in Charge in the Project	Input	Remarks
		1st Year				2nd Year				3rd Year						
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4			
Duration of the Project		3	6	9	12	15	18	21	24	27	30	33	36			
Output 1: Report of review on inconsistency of existing technical standards and its problems caused, and the necessities for improvement will be developed.																
Activities for Output-1																
Hydro 1 (under MOIT)																
1.1	Collect existing mandatory technical standards, related documents and information	■												CP in MOIT, ENV, MOC	Long-term Expert, Sort-term Expert	
1.2	Review existing mandatory technical standards and related documents	■	■											CP in MOIT, ENV, MOC	Long-term Expert, Sort-term Expert	
1.3	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement		■											CP in MOIT, ENV, MOC	Long-term Expert, Sort-term Expert	
Hydro 2 (under MOC)																
1.1	Collect existing mandatory technical standards, related documents and information	■												CP in MOC, MOIT, ENV	Long-term Expert, Sort-term Expert	
1.2	Review existing mandatory technical standards and related documents	■	■											CP in MOC, MOIT, ENV	Long-term Expert, Sort-term Expert	
1.3	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement		■											CP in MOC, MOIT, ENV	Long-term Expert, Sort-term Expert	
Thermal (under MOIT)																
1.1	Collect existing mandatory technical standards, related documents and information	■												CP in MOIT, ENV	Long-term Expert, Sort-term Expert	
1.2	Review existing mandatory technical standards and related documents	■	■											CP in MOIT, ENV	Long-term Expert, Sort-term Expert	
1.3	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement		■											CP in MOIT, ENV	Long-term Expert, Sort-term Expert	
Network (under MOIT)																
1.1	Collect existing mandatory technical standards, related documents and information	■												CP in MOIT, ENV	Long-term Expert, Sort-term Expert	
1.2	Review existing mandatory technical standards and related documents	■	■											CP in MOIT, ENV	Long-term Expert, Sort-term Expert	
1.3	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement		■											CP in MOIT, ENV	Long-term Expert, Sort-term Expert	
Output 2: Mandatory technical standards will be revised and developed.																
Activities for Output-2																
Hydro 1 (under MOIT)																
2.1	Develop new technical standards by Working Groups	<i>(No new technical standards for Hydro 1)</i>											CP in MOIT, ENV, MOC	Long-term Expert, Sort-term Expert		
2.2	Revise the existing technical standards by Working Groups		■	■	■									CP in MOIT, ENV, MOC	Long-term Expert, Sort-term Expert	
Hydro 2 (under MOC)																
2.1	Develop new technical standards by Working Groups		■	■	■									CP in MOC, MOIT, ENV	Long-term Expert, Sort-term Expert	
2.2	Make revision and addition into the existing technical standards by Working Groups	<i>(No existing technical standards for Hydro 2)</i>											CP in MOC, MOIT, ENV	Long-term Expert, Sort-term Expert		
Thermal (under MOIT)																
2.1	Develop new technical standards by Working Groups		■	■	■									CP in MOIT, ENV	Long-term Expert, Sort-term Expert	
2.2	Make revision and addition into the existing technical standards by Working Groups		■	■	■									CP in MOIT, ENV	Long-term Expert, Sort-term Expert	
Network (under MOIT)																
2.1	Develop new technical standards by Working Groups	<i>(No existing technical standards for Network)</i>												Long-term Expert, Sort-term Expert		
2.2	Make revision and addition into the existing technical standards by Working Groups		■	■	■									CP in MOIT, ENV	Long-term Expert, Sort-term Expert	
Output 3: Guidelines for technical standards will be developed.																
Activities for Output-3																
Hydro 1 (under MOIT)																
3.1	Prepare framework of guidelines based on revised and developed technical standards by Working							■						CP in MOIT, ENV, MOC	Long-term Expert, Sort-term Expert	
3.2	Develop guidelines by Working Groups							■	■	■	■	■	■	CP in MOIT, ENV, MOC	Long-term Expert, Sort-term Expert	
Hydro 2 (under MOC)																
3.1	Prepare framework of guidelines based on revised and developed technical standards by Working							■						CP in MOC, MOIT, ENV	Long-term Expert, Sort-term Expert	
3.2	Develop guidelines by Working Groups							■	■	■	■	■	■	CP in MOC, MOIT, ENV	Long-term Expert, Sort-term Expert	
Thermal (under MOIT)																
3.1	Prepare framework of guidelines based on revised and developed technical standards by Working							■						CP in MPIT, ENV, MOC	Long-term Expert, Sort-term Expert	
3.2	Develop guidelines by Working Groups							■	■	■	■	■	■	CP in MPIT, ENV, MOC	Long-term Expert, Sort-term Expert	
Network (under MOIT)																
3.1	Prepare framework of guidelines based on revised and developed technical standards by Working							■						CP in MPIT, ENV	Long-term Expert, Sort-term Expert	
3.2	Develop guidelines by Working Groups							■	■	■	■	■	■	CP in MPIT, ENV	Long-term Expert, Sort-term Expert	

Plans of Operation (PO) for Electric Power Technical Standards Promotion in Vietnam (Ver.2)

Calendar Year		2010																2011				2012				2013		Person in Charge in the Project	Input	Remarks
Project Year		Q1				Q2				Q3				Q4				Q1		Q2										
Duration of the Project		1	4	7	10	13	16	19	22	25	28	31	34	37	40	1	2	3	4											
Output 1: Report of review on inconsistency of existing technical standards and its problems caused, and the necessities for improvement will be developed.																														
Activities for Output-1																														
Hydro 1 (under MOIT)																														
1	Collect existing mandatory technical standards, related documents and information	■															C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert												
1	Review existing mandatory technical standards and related documents	■															C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert												
1	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement					■											C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert												
Hydro 2 (under MOC)																														
1	Collect existing mandatory technical standards, related documents and information	■															C/P in MOC, MOIT, MARD.	Long-term Expert, Sort-term Expert												
1	Review existing mandatory technical standards and related documents	■															C/P in MOC, MOIT, MARD.	Long-term Expert, Sort-term Expert												
1	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement					■											C/P in MOC, MOIT, MARD, EVN	Long-term Expert, Sort-term Expert												
Thermal (under MOIT)																														
1	Collect existing mandatory technical standards, related documents and information	■															C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
1	Review existing mandatory technical standards and related documents	■															C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
1	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement					■											C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
Network (under MOIT)																														
1	Collect existing mandatory technical standards, related documents and information	■															C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
1	Review existing mandatory technical standards and related documents	■															C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
1	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement					■											C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
Output 2: Mandatory technical standards will be revised and developed.																														
Activities for Output-2																														
Hydro 1 (under MOIT)																														
2	Develop new technical standards by Working	<i>(No new technical standards for Hydro 1)</i>																												
2	Revise the existing technical standards by Working Groups					■											C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert												
2	Review the final drafts of Technical Standards									■							C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert												
Hydro 2 (under MOC)																														
2	Develop new technical standards by Working Groups					■											C/P in MOC, MOIT, MARD.	Long-term Expert, Sort-term Expert												
2	Make revision and addition into the existing technical standards by Working Groups	<i>(No existing technical standards for Hydro 2)</i>																												
Thermal (under MOIT)																														
2	Develop new technical standards by Working Groups					■											C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
2	Make revision and addition into the existing technical standards by Working Groups					■											C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
2	Review the final drafts of Technical Standards									■							C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
Network (under MOIT)																														
2	Develop new technical standards by Working	<i>(No new technical standards for Network)</i>																												
2	Make revision and addition into the existing technical standards by Working Groups					■											C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
2	Review the final drafts of Technical Standards									■							C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
Output 3: Guidelines for technical standards will be developed.																														
Activities for Output-3																														
Hydro 1 (under MOIT)																														
3	Prepare framework of guidelines based on revised and developed technical standards by					■											C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert												
3	Develop guidelines by Working Groups									■							C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert												
3	Review the drafts of Technical Guidelines													■			C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert												
Hydro 2 (under MOC)																														
3	Prepare framework of guidelines based on revised and developed technical standards by									■							C/P in MOC, MOIT, MARD.	Long-term Expert, Sort-term Expert												
3	Develop guidelines by Working Groups									■							C/P in MOC, MOIT, MARD.	Long-term Expert, Sort-term Expert												
3	Review the drafts of Technical Guidelines													■			C/P in MOC, MOIT, MARD.	Long-term Expert, Sort-term Expert												
Thermal (under MOIT)																														
3	Prepare framework of guidelines based on revised and developed technical standards by					■											C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert												
3	Develop guidelines by Working Groups									■							C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert												
3	Review the drafts of Technical Guidelines													■			C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert												
Network (under MOIT)																														
3	Prepare framework of guidelines based on revised and developed technical standards by					■											C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
3	Develop guidelines by Working Groups									■							C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												
3	Review the drafts of Technical Guidelines													■			C/P in MOIT, EVN	Long-term Expert, Sort-term Expert												

Appendix-3

Minutes of JMC/JCC and Other Meetings

- 1. Minutes of 1st JMC Meeting (Mar. 15, 2010)**
- 2. Minutes of 2nd JMC Meeting (Jul. 27, 2010)**
- 3. Minutes of 3rd JMC Meeting (Mar. 04, 2011)**
- 4. Minutes of 1st JCC and 4th JMC Meeting (Jul. 05, 2011)**
- 5. Minutes of 5th JMC & 2nd JCC Meeting (Nov. 17, 2011)**
- 6. Minutes of General WG Meeting (Feb. 7, 2012)**
- 7. Minutes of 3rd JCC Meeting (Feb. 17, 2012)
(with Minutes of Mid-term Review by JICA)**
- 8. Minutes of 4th JCC Meeting (May 16-17, 2012)**
- 9. Minutes of 6th JMC Meeting (Nov. 1, 2012)**
- 10. Minutes of 7th JMC & 5th JCC Meeting (Apr. 24, 2013)
(with Minutes of Terminal Evaluation by JICA)**
- 11. Minutes of Joint Working Group Meeting (Jun. 5, 2013)**
- 12. Minutes of 8th JMC & 6th JCC Meeting (Jun. 5, 2013)**

MINUTES OF MEETING
ON
THE FIRST JOINT MANAGEMENT COMMITTEE
IN
THE TECHNICAL COOPERATION PROJECT
ON
ELECTRIC POWER TECHNICAL STANDARDS PROMOTION IN VIETNAM

Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched a study team on the Technical Cooperation Project on Electric Power Technical Standards Promotion in Vietnam (hereinafter referred to as "the JICA Project Team") and held the First Joint Management Committee (hereinafter referred to as "JMC") meeting with Vietnamese authorities concerned including Ministry of Industry and Trade (hereinafter referred to as "MOIT"), Ministry of Construction (hereinafter referred to as "MOC") and Vietnam Electricity (hereinafter referred to as "EVN") as follows:

Date and Time : March 15, 2010, 14:00-17:00

Place : Meeting room No 206 at MOIT

Participants: MOIT: Mr. Phuong Hoang Kim, Mr. Dang Hai Dzung, Mr. Nguyen Van Long, Mr. Cu Huy Quang,
MOC: Mr. Nguyen Cong Thinh,
EVN: Mr. Nguyen Quang Viet, Ms. Do Lan Binh, Mr. Tran Hong Tien, Mr. Nguyen Xuan Khiem
JICA Vietnam: Mr. Murooka Naomichi
JICA Project Team: Mr. Nakamura Shigeru, Mr. Mizuhashi Yutaro, Mr. Okada Mototaro, Mr. Ooyama Yoshio, Mr. Imamura Hiroshi, Mr. Kuwahara Ken'ichi, Mr. Aki Toshio, Mr. Kaneko Masafumi

The JICA Project Team and Vietnamese authorities concerned discussed and agreed on the following subjects.

Contents:

1. Opening Remarks

Mr. Kim, a delegate of the Vietnamese authorities concerned, Mr. Murooka, a delegate of JICA Vietnam, and Mr. Nakamura, a delegate of the JICA Project Team gave an opening address in turn, and Mr. Kim and Mr. Nakamura introduced members of each team.

2. Draft Work Report

After explanation of Draft Work Report by the JICA Project Team, the JICA Project Team and Vietnamese authorities concerned exchanged opinions on the Project as follows:

1) Framework of the Project Organization

Vietnamese authorities concerned proposed that JMC1 and JMC2 should be substantially unified in their actual activities and that WG1 (hydropower under MOIT) and WG2 (hydropower under MOC) be substantially unified. The JICA Project Team agreed to the proposal and stated that the both JMCs and WGs would be conducted at the same time practically as one committee and group but as the separate JMCs and WGs nominally as agreed in R/D.

EVN expressed its intension to cooperate not only in the activities under MOIT (WG1, WG3 and WG4) but also in the activities under MOC (WG2).

2) Schedule of Fieldwork Missions

Vietnamese authorities concerned requested that the JICA Project Team should inform a schedule (member,

time and duration) and agendas of Fieldworks in Vietnam including JMC meetings, WG meetings and site surveys for agreement at least two weeks before dispatching a mission to Vietnam and also should deliver the meeting materials in advance so that the Vietnamese side could arrange meetings and site surveys. And they also requested that each meeting should be held intensively in order to enable all the members to participate in the meetings.

Vietnamese authorities concerned requested that JICA Project Team should consider the schedule of preparation of the final draft of Technical Standard taking into consideration that 3 months period is required for public hearing before approval of the final draft by JCC.

3) Structure of Technical Standards

Vietnamese authorities concerned requested that the JICA Project Team should divide Vols. 1 to 4 of the existing Technical Standards of MOIT into mandatory standards and voluntary guidelines, and renew them because some provisions of them are out of date to apply them to the current facilities. And they stated that Vols. 5 to 7 could be further divided into mandatory standards and voluntary guidelines with only limited modifications and the JICA Project Team should review Vols. 5 to 7 of the existing Technical Standards and concentrate the work into development of Guidelines.

The JICA Project Team confirmed that mandatory standards should be prepared in the first stage and then voluntary guidelines in the second stage according to the work schedule of the Project proposed in the Work Report.

MOC suggested that the technical standards (technical regulations) for construction of hydropower facilities should be developed in one volume mainly for safety requirements, and that the guidelines should be prepared separately for design, construction and completion inspection.

4) Schedule of Review Stage

Vietnamese authorities concerned advised that the time period of Review Stage is rather short and should be started soon. The JICA Project Team proposed that the Second Fieldwork, which was originally scheduled from the middle of May 2010, would be postponed by one month to allocate the sufficient time for the Review Stage. The revised schedule will be shown in the final Work Report.

5) Capacity Building and Public Relations

Vietnamese authorities concerned proposed that public relations should include dissemination to electric power companies and DOIT (Department of Industry and Trade). The JICA Project Team replied that dissemination to electric power companies could be conducted in some additional workshops in the Second Stage.

6) Definition of Large-scale thermal power plant

Vietnamese authorities concerned requested the JICA Project Team to prepare classification criteria for scale of thermal power plant by unit output. The JICA Project Team replied that he would prepare a classification criterion in due consulting with the Vietnamese side.

7) Baseline investigations

Vietnamese authorities concerned stated that questionnaires for the baseline investigations should be distributed to electric power companies after approval by the relevant authorities (MOIT, MOC, EVN). The JICA Project Team agreed to the requested procedure.

8) Local Consultants

Vietnamese authorities concerned suggested that the local consultants shall be selected in due consideration of the experience in the technical standards. The JICA Project Team informed that the local consultants would be selected through the competitive bidding and selected bidders would attend a meeting held on March 19, 2010.

9) Counterpart Training in Japan

The schedule of the counterpart training in Japan was confirmed among the parties in the meeting as follows; 1st Group in November 2010, 2nd and 3rd Groups in April 2011.

10) Procurement of Material

Vietnamese authorities concerned proposed that a vehicle should be procured for the Project considering dissemination and capacity building of standards to the related Vietnamese organizations and supporting the project activities. The JICA Vietnam Office replied that he would consider the procurement of a vehicle in due examination of a request form with fair reasons.

11) Required Undertaking from Vietnamese Side

Vietnamese authorities concerned agreed to provide undertakings as requested in the draft Work Report including office space for the Project Team for the long-term expert and the missions of short-term experts.

12) Final Work Report

The JICA Project Team stated that the Work Report would be finalized incorporating the agreed issues and opinions of the participants in the meeting.

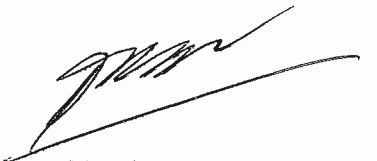
3. Confirmation of PDM and PO

The JICA Project Team and Vietnamese authorities concerned agreed on PDM and PO as agreed in Record of Discussion dated November 26, 2009 subject to updating the activity schedule in PO.

4. Assignment of WG Members

The JICA Project Team requested that a staff of all concerning organizations for the Project should be assigned to a member of WGs. Vietnamese authorities concerned replied that they would submit a member list of WGs soon.

The members of Working Groups from MOIT, MOC and EVN are confirmed as shown in Attachment-1.



MOIT
Deputy Director General
Science & Technology Dept.
Dr. Phuong Hoang Kim



MOC
Deputy Director General
Dept. of Science, Technology
& Environmental
Dr. Tran Huu Ha



EVN
Deputy Director
Science, Technology
& Environmental Dept.
Mr. Nguyen Quang Viet



JICA Project Team
Leader
Mr. Nakamura Shigeru

Member of Working Groups

1. WG1 (hydropower under MOIT) and WG2 (hydropower under MOC)

- 1) Mr. Tran Viet Hoa (Science and Technology Dept. of MOIT)
- 2) To be named (Science and Technology Dept. of MOIT)
- 3) Mr. Hoang Quang Nhu (Dept. of Science, Technology and Environment, MOC)
- 4) Mr. Nguyen Cong Thinh (Dept. of Science, Technology and Environment, MOC)
- 5) Mr. Doan Trong Tuan (Vietnam Institute of Architecture, Urban and Rural Planning , MOC)
- 6) Mr. Le Huu Hoang (Power Generation Dept., EVN)
- 7) Mr. Tran Hong Tien (Power Generation Dept., EVN)
- 8) To be named (MARD)
- 9) To be named (MOST)

2. WG3 (thermal power under MOIT)

- 1) Mr. Nguyen Van Long (Science and Technology Dept. of MOIT)
- 2) Mr. Tran Hong Tien (Power Generation Dept., EVN)
- 3) Mr. Nguyen Xuan Khiem (Science, Technology and Environment Dept., EVN)
- 4) To be named (MOST)

3. WG4 (network under MOIT)

- 1) Mr. Dang Hai Dung (Science and Technology Dept. of MOIT)
- 2) Mr. Cu Huy Quang (Science and Technology Dept. of MOIT)
- 3) Mr. Nguyen Duy Hoa (Science and Technology Dept. of MOIT)
- 4) Ms. Do Lan Binh (Power Network Dept., EVN)
- 5) Mr. Nguyen Xuan Khiem (Science, Technology and Environment Dept., EVN)
- 6) To be named (MOST)

MINUTES OF MEETING
ON
THE SECOND JOINT MANAGEMENT COMMITTEE
IN
THE TECHNICAL COOPERATION PROJECT
ON
ELECTRIC POWER TECHNICAL STANDARDS PROMOTION IN VIETNAM

Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched the second mission of the project team on the Technical Cooperation Project on Electric Power Technical Standards Promotion in Vietnam (hereinafter referred to as “the JICA Project Team”) and held the Second Joint Management Committee (hereinafter referred to as “JMC”) meeting with Vietnamese authorities concerned including Ministry of Industry and Trade (hereinafter referred to as “MOIT”), Ministry of Construction (hereinafter referred to as “MOC”), Ministry of Agriculture and Rural Development (hereinafter referred to as “MARD”), Ministry of Science and Technology (hereinafter referred to as “MOST”) and Vietnam Electricity (hereinafter referred to as “EVN”) as follows:

Date and Time : July 27, 2010, 8:30-12:00

Place : Meeting room No 207 at MOIT

Participants: **MOIT:**

Regal Dept.: Mr. Pham Thanh Trung, Mr. Pham Mai Hoa

Science and Technology Dept.: Mr. Dang Hai Dung, Mr. Nguyen Van Long, Mr. Cu Huy Quang, Mr. Tran Viet Hoa, Mr. Duong Khac Hien, Mr. Nguyen Duy Hoa,

Technical safety and Environment Dept.: Mr. Cao Van Dung

MOC:

Dept. of Science, Technology and Environment: Mr. Tran Huu Ha,

MARD:

Mr. Dinh Vu Thanh

MOST:

Institute of Measurement and Quality: Mr. Luong Van Phan

EVN:

Ms. Do Lan Binh, Mr. Le Huu Hoang, Mr. Vu Ta Thong, Mr. Tran Hong Tien, Mr. Nguyen Xuan Khiem

Individual expert:

Mr. Tran Van Ap

Electrical Testing Center (ETC):

Mr. Vu Dinh Khiem, Mr. Tran Xuan Tuan, Mr. Ngo Thanh, Mr. Trinh Van Yen

JICA Vietnam:

Ms. Le Quynh Anh

JICA Project Team:

Mr. Nakamura Shigeru, Mr. Ooyama Yoshio, Mr. Imamura Hiroshi, Mr. Kuwahara Ken'ichi, Mr. Aki Toshio

The JICA Project Team and Vietnamese authorities concerned discussed and agreed on the following contents.

Contents:

1. Opening Remarks

Mr. Dung of MOIT and Dr. Ha of MOC, delegates of the Vietnamese authorities concerned gave an opening address in turn stating the points of discussions in the 2nd JMC Meeting.

2. Acceptance of Work Report

The following were confirmed among the parties concerned:

- JICA Project Team submitted the 10 copies of final Work Report to the Vietnamese counterpart in the meeting with the Vietnamese counterpart on June 03.
- The Vietnamese counterpart accepted the contents of the final Work Report.

3. Contents of draft Review Report

3.1 General Issues

- 1) Scope of the Project was confirmed as explained by JICA Project Team based on the proposal in the final Work Report.
- 2) The representative of MOC insisted that MARD shall be indicated in the framework of the Project. Also a participant from MOIT insisted, as a member of WG for hydropower, that MOC and MARD shall cooperate each other. JICA Project Team fully agreed to these comments.
- 3) Regarding the relationship between MARD and MOC, it was recommended as an idea of MOC that the Technical Regulations and Guidelines for design and construction of hydropower civil works should be promulgated under the co-name of MOC and MARD. MARD expressed his support to this idea. This matter shall be discussed further for final conclusion.
- 4) Regarding the status of Guidelines to be prepared in the Project, JICA Project Team presented the three ideas; Option-1/ Guidelines to be prepared as one of QCVN, Option-2/ Guidelines to be prepared as the Special QCVN and Option-3/ Guidelines to be prepared as TCCS (industrial level standards). Among the three Options, majority of the parties concerned supported Option-2 in general. This matter shall be discussed further for final conclusion.
- 5) Regarding the contents of the Guidelines, it was agreed in general to prepare the Guidelines with stipulations of only voluntary provisions by stipulating all mandatory requirements in the corresponding Technical Regulations.
- 6) Regarding the structure of Guidelines, JICA Project Team proposed to arrange articles in Guidelines corresponding to each article of Technical Regulations (article by article), and the proposed structure of Guidelines was agreed among the parties concerned in principle.

3.2 Hydropower Issues

The Vietnamese authorities concerned agreed to the basic issues in the Draft Review Report as explained by JICA Project Team in general as follows:

- 1) Classification criteria of the hydropower projects currently allied in QCVN Vol.5 is that of TCXDVN 285/2002 according to the stipulation in Article 72 of Vol.5. These criteria shall be revised so as to conform to the classification in QCVN 03-2009 of MOC.
- 2) The current scope of application of QCVN Vol.5 and Vol.6 for the electrical equipment defined in Article 2 of Vol.5 (electrical equipment with rated output equal to or greater than 30MW) will not be changed in the revised QCVN.
- 3) The current scope of application of QCVN Vol.5 and Vol.6 for the civil works, that is excluding hydropower plants with the special dams defined by Government Decree No.143/2003/ND-CP (here the special dams are those with the reservoirs which have the capacity of over 1,000,000,000m³) will be revised so as to apply the provisions of QCVN Vol.5 and Vol.6 also to the hydropower plants with special dams.
- 4) The policies proposed in the draft Review Report will be applied for the development or revisions of Technical Regulations and Guidelines for hydropower plants.

3.3 Thermal Power Issues

The Vietnamese authorities concerned agreed to the contents of Draft Review Report as explained by JICA Project Team. Some opinions raised by Vietnamese authorities concerned are as follows:

1) Classification of Boilers

Vietnamese authorities concerned requested that JICA Project Team should classify the articles of the exiting technical regulations (QCVN-QTD5&6) by facilities, because the regulations of both boiler and HRSG (Heat Recovery Steam Generator) are mixed up together in the articles. The JICA Project Team would revise the exiting technical regulations in consideration of this matter.

2) Position of the technical guidelines

Some of the Vietnamese authorities concerned suggested that the Guidelines should be prepared as mandatory standards. The JICA Project Team replied that Project Team and Vietnamese authorities concerned would discuss this matter together because it was common subject of this project.

3.4 Network Issues

The basic policy for the revision of Technical Regulations related to the network issues are as follows:

1) Vietnamese counterparts accepted the suggestion of JICA Project Team's basic concept for revising the Technical Regulations Volumes 1 to 7. Both sides agreed to proceed with next step to evaluate and analyze technically the contents in each article.

2) Vietnamese counterparts requested especially the following items to add detail explanations and to revise the values with consideration of the international methods. JICA Project Team agreed its priority and importance and will consult with Vietnamese side about these items carefully in the next step.

- Prevention measurements against lightning

- Appropriate judgment criteria of earthing ground, including the effect to the communication line.

- Appropriate judgment criteria of minimum clearance with conductors and other objects.

3) Vietnamese counterparts proposed that designing Technical Regulations Volumes 1 to 4 should be simplified and combined into one volume. JICA Project Team agreed their proposal and will analyze the appropriate structure and table of contents in the next step.

4. Other Issues

1) Baseline Survey

The baseline survey on accidents of electric power facilities was planned to be conducted by ETC in August and September 2010 under the scope of the contract between JICA Project Team and ETC. However the parties concerned agreed that MOIT and EVN would cooperate with ETC for conducting the baseline survey.

JICA Project Team explained that schedule of baseline survey could be adjusted in accordance with the actual situation of the survey.

2) Counterpart Training

The parties concerned agreed the schedule of the counterpart training in Japan as proposed in the final Work Report. JICA Project Team explained the schedule of required procedures for the first counterpart training in Japan planned in November 2010. JICA Vietnam Office will issue a letter of announcement to MOIT for the first counterpart training to start the procedure officially.

3) Schedule of 3rd Mission of JICA Project Team

The parties concerned agreed to the schedule of 3rd Mission of JICA Project Team as proposed (from Oct. 08 to 31) subject to some adjustment. The JICA Project Team will perform the site visits to power plants and network facilities during the 3rd Mission and submit the detailed schedule of the site visits to the Vietnamese side for arrangement in due course.

MOIT requested JICA Project Team to consider the survey related to the grounding system.

4) Survey on the actual needs of technical standards and guidelines

JICA Project Team explained about the survey on the actual needs of technical standards and guidelines for electric power facilities to be performed by the local consultants during the period from June 2010 to January 2011 under the scope of the contract. The parties concerned agreed to conduct the survey as proposed by JICA Project Team.



MOIT
Deputy Director General
Science & Technology Dept.
Dr. Phuong Hoang Kim



MOC
Deputy Director General
Dept. of Science, Technology
& Environmental
Dr. Tran Huu Ha



EVN
Deputy Director
Science, Technology
& Environmental Dept.
Mr. Nguyen Quang Viet



JICA Project Team
Leader
Mr. Nakamura Shigeru

**MINUTES OF MEETING
ON
THE THIRD JOINT MANAGEMENT COMMITTEE
IN
THE TECHNICAL COOPERATION PROJECT
ON
ELECTRIC POWER TECHNICAL STANDARDS PROMOTION IN VIETNAM**

Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched the fourth mission of the project team on the Technical Cooperation Project on Electric Power Technical Standards Promotion in Vietnam (hereinafter referred to as “the JICA Project Team”) and held the Third Joint Management Committee (hereinafter referred to as “JMC”) meeting with Vietnamese authorities concerned including Ministry of Industry and Trade (hereinafter referred to as “MOIT”), Ministry of Construction (hereinafter referred to as “MOC”), Ministry of Agriculture and Rural Development (hereinafter referred to as “MARD”), Ministry of Science and Technology (hereinafter referred to as “MOST”) and Vietnam Electricity (hereinafter referred to as “EVN”) as follows:

Date and Time : March 04, 2011, 8:30-12:20

Place : Meeting room No 208 at MOIT

Participants: **MOIT:**

Science and Technology Dept.: Mr. Dang Hai Dung, Mr. Nguyen Van Long, Mr. Cu Huy Quang, Ms. Hau

Institute for Policy and Strategy: Mr. Tuan Anh

Individual Expert: Mr. Chan, Mr. Hung

MOC:

Dept. of Science, Technology and Environment: Dr. Tran Huu Ha,

MARD:

Mr. Dinh Vu Thanh

EVN:

Mr. Nguyen Quang Viet, Ms. Do Lan Binh, Mr. Nguyen Xuan Khiem, Mr. Trung

Electrical Testing Center (ETC):

Mr. Vu Dinh Khiem, Mr. Nguyen Quang Trung, Mr. Trinh Van Yen

JICA Tokyo:

Mr. Takada Kenji

JICA Vietnam:

Ms. Murakami Yuka

JICA Project Team:

Mr. Nakamura Shigeru, Mr. Mizuhashi Yutaro, Mr. Umesaki Shuji, Mr. Okada Mototaro,

Mr. Ooyama Yoshio, Mr. Imamura Hiroshi, Mr. Koga Masaaki, Mr. Kuwahara Ken'ichi,

Mr. Takayoshi Masuda, Ms. Pham Hong Hai

The JICA Project Team and Vietnamese authorities concerned discussed and agreed on the following contents.

Contents:

1. Opening Remarks

Dr. Tran Huu Ha of MOC, delegates of the Vietnamese authorities concerned, gave an opening address stating the points of discussions in the 3rd JMC Meeting.

2. Major Activities in 1st Stage (Overall Schedule)

The JICA Project Team reported the major project activities performed so far since March 2010 and the reported issues were confirmed by the Vietnamese authorities concerned.

3. Confirmation of contents of the 2nd draft of revised and new Technical Regulations

The JICA Project Team reported the main points of the 2nd draft of Technical Regulations as follows:

1) General Issue

The scope of the Project and status of the Project outputs (Draft of Technical Regulations and Draft of Guidelines) were reconfirmed.

2) Hydropower Issues

- Scope of application for Technical Regulations Vol.5 and Vol.6 will cover large and important reservoirs though the current regulations do not cover them, and cover all hydropower plants including ones with installed capacity less than 30 MW connected to the power grid subject to the final conclusion in a WG Meeting.
- Scope of application of the new Technical Regulation for Hydropower Civil Works under MOC is currently suggested by the WG members to cover only hydropower plants with installed capacity more than 30 MW. This will be further discussed considering coordination with the scope of the application of Vol.5 and 6.
- Application of the USACE's design manual to the dam design, which is proposed in the 2nd draft of Technical Regulation for Hydropower Civil Works, will be concluded after further discussions.
- Provisions for the design of hydromechanical equipment in the 2nd draft of Technical Regulation for Hydropower Civil Works are proposed so as not to prevent application of international standards.

3) Thermal Power Issues

- Classification by installed capacity of power plants is not applied to thermal power plants.
- The Technical Regulations will not cover thermal power plants using waste materials.
- The Draft Technical Regulation for design of thermal power facilities is prepared based on the understanding that they should provide both of investors (design side) and the regulatory authority (regulation side) with common rules in order to construct safe and stable thermal power plants.
- The Technical Regulations are prepared to cover fuel and water treatment equipment, anti-pollution equipment, measurement and protective devices, etc., according to the request of Vietnamese authorities, although they do not cover all facilities in thermal power plants.

3) Network Issues

- Technical Regulations Vols. 5 to 7 are prepared based on the draft prepared in the previous JICA Study in 2007. Their major items are not changed but some provisions are shifted from the existing Technical Regulations Vols. 1 to 4.
- Old-New comparison table will be prepared to show the complicated process of revisions.
- The volume number of each Technical Regulation shall be reorganized.

4. Confirmation of activities in the remaining period of the 1st Stage

The JICA Project Team reported the major points of activities in the remaining period of the 1st Stage of the Project as follows:

1) Preparation of Old-New Comparison Table

The Vietnamese side requested the JICA Team to prepare Old-New Comparison Tables not only for the network group but also for hydropower and thermal power groups in order to show how the existing Technical Regulations have been revised and how the opinion of Vietnamese side have been reflected in the revisions. The JICA Project Team agreed to prepare Old-New Comparison Tables.

2) Background of Revisions

EVN requested the JICA Project Team to provide Vietnamese side with explanation of reasons for the revisions of existing Technical Regulations and replies against the opinions of Vietnamese side. The JICA Project Team answered that reasons for revisions would be explained in Old-New Comparison Tables.

3) Scope of Application for Hydropower Plants

The Vietnamese side raised the idea to set a criterion of scope of application at an installed capacity of hydropower plants. The participants agreed to discuss this matter in the next Working Group Meeting.

4) Renumbering of Volumes of the existing Technical Regulations

The participants agreed to discuss about renumbering of volumes for the existing Technical Regulations incorporating the new Technical Regulation in the next Working Group Meeting.

5. Arrangement for the 1st Workshop

The JICA Team proposed the date and time, venue and agenda of the 1st Workshop, and the both parties confirmed to assign chairpersons for each of hydropower, thermal power and network sessions from MOIT, MOC (hydropower only) and EVN.

6. Baseline Survey

The ETC (the local consultant assigned for Baseline Survey) reported the results of Baseline Survey. MOIT and EVN stated that the reported survey has provided with sufficient research outputs and the report involved satisfactory contents.

On the other hand, the JICA Project Team proposed that answers of questionnaires should be collected as much as possible from the remaining power plants and power network companies to which the questionnaires have been delivered in cooperation with EVN.

EVN agreed to the proposal of JICA Project Team.

The ETC will translate research results into English and submit to the JICA Project Team.

7. Final Draft of Technical Regulations

The JICA Project Team reconfirmed that the official output of the Project was English version and that the Vietnamese side should take responsibilities for translation of the output into Vietnamese for their promulgation. The Vietnamese side participants confirmed that they fully understood this matter.

8. 5th Mission of JICA Project Team

The JICA Project Team proposed that the 5th Mission would be conducted in June and July to hold WG Meetings, 2nd Workshop at three places, 4th JMC Meeting and the 1st JCC Meeting, and the Vietnamese side agreed that the 1st JCC meeting would be held by the initiative of Vietnamese side.

9. Comments from JICA

Mr. Kenji Takada of JICA gave an address of thanks for the cooperation of Vietnamese authorities in the implementation of the Project and requested further cooperation in the accumulated Project activities including preparation of Old-New Comparison Tables for the existing and new Technical Regulations, etc.

The Vietnamese authorities stated that they understood the situation of the Project and that they would consider arrangement of personnel for preparation of the draft Technical Regulations, especially for the network group for its big work volume.

10. Closing Remarks

Mr. Dang Hai Dung of MOIT gave an address of thanks to participants for making a success of the 3rd JMC Meeting.



MOIT
*Deputy Director General
Science & Technology Dept.
Dr. Phuong Hoang Kim*



MOC
*Deputy Director General
Dept. of Science, Technology
& Environmental
Dr. Tran Huu Ha*



EVN
*Deputy Director
Science, Technology
& Environmental Dept.
Mr. Nguyen Quang Viet*



JICA Project Team
*Leader
Mr. Nakamura Shigeru*

MINUTES OF MEETING
ON
THE FIRST JOINT COORDINATION COMMITTEE
AND
THE FOURTH JOINT MANAGEMENT COMMITTEE
IN
THE TECHNICAL COOPERATION PROJECT
ON
ELECTRIC POWER TECHNICAL STANDARDS PROMOTION IN VIETNAM

Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched the fifth mission of the project team on the Technical Cooperation Project on Electric Power Technical Standards Promotion in Vietnam (hereinafter referred to as “the JICA Project Team”) and held the First Joint Coordination Committee (hereinafter referred to as “JCC”) meeting and the Fourth Joint Management Committee (hereinafter referred to as “JMC”) meeting with Vietnamese authorities concerned including Ministry of Industry and Trade (hereinafter referred to as “MOIT”), Ministry of Construction (hereinafter referred to as “MOC”), and Vietnam Electricity (hereinafter referred to as “EVN”) as follows:

Date and Time : July 05, 2011 8:30-12:00

Place : Meeting room No 206 at MOIT

Participants: **MOIT:**

Science and Technology Dept.: Dr. Phuong Hoang Kim, Mr. Dang Hai Dung, Mr. Nguyen Van Long, Ms. Vu Mai Hau

MOC:

Dept. of Science, Technology and Environment: Dr. Tran Huu Ha,

EVN:

Mr. Nguyen Qunag Viet, Mr. Le Huu Hoang, Mr. Vu Ta Thong, Mr. Tran Hong Tien, Mr. Nguyen Xuan Khiem

Electrical Testing Center (ETC):

Mr. Vu Dinh Khiem, Mr. Tran Xuan Tuan, Mr. Nguyen Quang Trung, Mr. Tuan Anh, Mr. Trinh Van Yen

JICA Vietnam:

Ms. Murakami Yuka

JICA Project Team:

Mr. Nakamura Shigeru, Mr. Mizuhashi Yutaro, Mr. Umesaki Shuji, Mr. Okada Mototaro, Mr. Ooyama Yoshio, Mr. Imamura Hiroshi, Mr. Koga Masaaki, Mr. Kuwahara Ken'ichi, Mr. Aki Toshio, Mr. Yamada Tsuguhiko, Mr. Masuda Takayoshi, Ms. Pham Hong Hai

The JICA Project Team and Vietnamese authorities concerned discussed and agreed on the following contents.

Contents:

1. Opening Remarks

Mr. Dung of MOIT, delegates of the Vietnamese authorities concerned, gave an opening address in turn stating the points of discussions in the 1st JCC and 4th JMC Meeting.

2. Report of Current status of the Project

According to the agenda, JICA Project Team reported current status of the Project as follows:

- 1) Final Draft of Technical Regulations will be prepared by revising the Preliminary Final Draft

based on the conclusion of the final WG Meeting.

- 2) English version of Final Draft of Technical Regulation shall be submitted to JICA by July 25.
- 3) Submission of English version of Final Draft of Technical Regulation for Hydropower Civil Works under MOC will delay as MOC requires further confirmation after revisions to be made based on the recent comments of MOC.

Based on the existing content of Final Draft of Technical Regulations, MOC stated as follows:

- There are some basic issues to be confirmed or concluded by MOC.
- There are some contents in the Preliminary Final Draft (English version) lead to misunderstanding or difficult to understand.
- There is inconsistent in the contents between the Vietnamese version and English version.
- There are some criteria /article to be given in the content of Final Draft

3. Preparation of Final Draft of Technical Regulations (English version) by JICA Project Team

The parties concerned agreed as follows:

- 1) Arrangement of new volume numbers

Arrangement of new volume numbers for each Technical Regulation will be as follows:

<u>Existing Vol. No.</u>	<u>New Vol. No.</u>
Vol.1 to 4	Vol.1 (design of network facilities)
--	Vol.2 (design of thermal power facilities)
Vol.7	Vol.3 (construction of network facilities)
Vol.6	Vol.4 (operation)
Vol.5	Vol.5 (inspection)
--	Hydropower Civil Works (MOC)

- No number will be applied for Technical Regulations under MOC.

- 2) Arrangement of Article No. for the revised Volumes

New number will be applied for Vol.1 which corresponds to the existing Vol.1 to Vol.4.

In order to facilitate the review of Final Draft by comparing the currently existing Technical Regulations, old number will be maintained in Vol.3, Vol.4 and Vol.5, which correspond to the existing Vol.7, Vol.6 and Vol.5 respectively, by applying branch number for additional articles (example: Article 100-a1). In the final Vietnamese version for promulgation, the numbering of Articles should comply with the regulation of Technical and Regulation Law

- 3) JICA Project Team will prepare the English version of Final Draft based on the comments received up to the 2nd Workshop on June 22, 24 and 28 and the conclusion of the WG Meeting on June 30, and submit them to JICA by July 25 (total 25 sets, for Vietnamese side 15 sets) except for Technical Regulation for Hydropower Civil Works.

Final Draft of Technical Regulation for Hydropower Civil Works under MOC will be submitted by JICA Team in October 2011 after necessary procedure of MOC.

- 4) JICA Project Team will update the Vietnamese version of Final Draft based on the English version as the documents for reference, and submit them to Vietnamese authorities in August 2011 except for Technical Regulation for Hydropower Civil Works.
- 5) As the further revision of the English version may be necessary based on the additional comments which will be provided by the participants of Workshops and Working Group members for improving the quality of Technical Regulations, JICA Project Team will cooperate with the Vietnamese side in further improvement of the Final Draft during the process of promulgation.

4. Finalization of Draft Technical Regulations (Vietnamese version) by Vietnamese authorities

JICA Project Team requested the Vietnamese authorities to finalize Draft Technical Regulations as follows:

1) Actions against further comments

Additional comments will be collected from the participants of 2nd Workshop by email.

Vietnamese WG members shall compile the comments before transferring them to JICA Project Team and conclude the necessary revisions on Final Draft submitted by JICA Project Team.

2) Finalization of draft Technical Regulations by Vietnamese authorities

Vietnamese WG members will finalize, in cooperation with JICA Project Team, the draft of Technical Regulations within six months after JICA Project Team submitted the Final Draft.

Finalization work includes further revisions on the Final Draft submitted by JICA Project Team and linguistic review and corrections on the Vietnamese version.

Vietnamese authorities will share the information of revisions on Vietnamese version with the JICA Project Team for development of Guidelines in the 2nd Stage..

JICA Project Team will support Vietnamese authorities for the technical matters by participating discussions and sharing the ideas on further revisions.

On the other hand, the Vietnamese side confirmed their responsibility to finalize the Vietnamese version for promulgation.

5. Promulgation of Technical Regulations (VN version) by Vietnamese authorities

JICA Project Team requested the Vietnamese authorities to promulgate Technical Regulations as follows:

1) Promulgation procedure of Technical Regulations under MOIT will be commenced by MOIT after finalization of them by the Vietnamese authorities within six months after JICA Project Team submitted the English version of Final Draft.

2) Promulgation procedure of Technical Regulations under MOC will be commenced by MOC after finalization by the Vietnamese side within three months after JICA Project Team submitted the English version of Final Draft.

3) MOIT and MOC shall make utmost effort to achieve the promulgation of Technical Regulations within the Project period, by February, 2013.

MOC stated that it would be difficult to finalize Technical Regulations within three months, however, MOC intended to finalize and promulgate it by the end of March 2012 and by the end of June 2012 respectively.

MOIT proposed that Technical Regulations and Guidelines would be promulgated simultaneously as the both documents were closely related each other and it would be necessary to revise Technical Regulations during preparation of Guidelines.

JICA Project Team proposed and MOIT agreed to discuss the proposed promulgation schedule in the next JMC Meeting because it is expected, as the Project Purpose in the PDM, to enact and operate effectively and efficiently through disseminating Technical Standards and Guidelines to electric power industry in Vietnam.

On the other hand, MOC stated that they would promulgate Technical Regulations under MOC by the end of June 2012 without waiting for the promulgation of Guideline.

6. Development of Guideline (2nd Stage)

JICA Project Team proposed a tentative schedule of the second stage as follows:

1) Outline of activities

JICA Project Team proposed that the Workshop would be held twice in the 2nd Stage instead of once which was proposed in Work Report of May 2010, and that the number of Field Works in Vietnam would be increased to six times from three times in the original plan.

2) Project Term

JICA Project Team confirmed the opinion of Vietnamese authority concerning the possibility of extension of Project term for some months until March 2013 or a few months later for securing the time for successful completion of Guideline and also considering the schedule of lunar New Year of 2013, although the PDM stipulated the termination in January, 2013.

The Vietnamese authorities agreed to the outline of activities proposed by the JICA Project Team.

Also the Vietnamese authorities stated no objection against the extension of the Project Term for some months by giving an authority of the final decision to the JICA side.

JICA Project Team expressed its intention that the Team would focus their efforts on preparation of Guidelines in the 2nd Stage while they would support the Vietnamese authorities in finalizing Technical Regulations for the promulgation.

Regarding the operation of the Project, the Vietnamese authorities expressed their opinion and JICA Project Team replied as follows:

1) Vietnamese side requested JICA Team to keep the unified methodology for different Groups of JICA Team (hydro, thermal, network) in review, revise and draft Guidelines.

2) The contents of Guidelines should reflect the current status of Vietnamese facilities, so if necessary the JICA Team should do more surveys on specific issues.

3) Schedule control of the document preparation

The Vietnamese authorities requested JICA Project Team to submit documents for the Workshops and WG Meetings to the Vietnamese side earlier so that the Vietnamese side would have sufficient time to review the documents.

JICA Project Team stated that they would make utmost effort to prepare documents for meetings earlier.

4) Translation of documents

The Vietnamese authorities requested JICA Project Team to translate documents for the Workshops and WG Meetings into Vietnamese so as to closely follow English editions.

JICA Project Team stated that it was difficult for them to evaluate quality of translation into Vietnamese by themselves.

The parties concerned agreed to provide with sufficient time for translation as much as possible to assure quality of translation.

5) Preparation of resources (human & budget)

With notice that there are different volume of work between each sectors (network, hydro, thermal), the Vietnamese authorities stated that it was important for the Project to allocate appropriate resources correspond to the volume of each groups in implementing Guideline Stage in which a large volume of resource inputs was required.



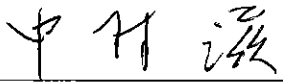
MOIT
Director General
Science & Technology Dept.
Mr. Nguyen Dinh Hiep



MOC
Deputy Director General
Dept. of Science, Technology
& Environmental
Dr. Tran Huu Ha



EVN
Deputy Director
Science, Technology
& Environmental Dept.
Mr. Nguyen Quang Viet



JICA Project Team
Leader
Mr. Nakamura Shigeru

**MINUTES OF MEETING
ON
THE SECOND JOINT COORDINATION COMMITTEE
AND
THE FIFTH JOINT MANAGEMENT COMMITTEE
IN
THE TECHNICAL COOPERATION PROJECT
ON
ELECTRIC POWER TECHNICAL STANDARDS PROMOTION IN VIETNAM**

Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the sixth mission of the project team on the Technical Cooperation Project on Electric Power Technical Standards Promotion in Vietnam (hereinafter referred to as "the JICA Project Team") and held the Second Joint Coordination Committee (hereinafter referred to as "JCC") meeting and the Fifth Joint Management Committee (hereinafter referred to as "JMC") meeting with Vietnamese authorities concerned including Ministry of Industry and Trade (hereinafter referred to as "MOIT"), Ministry of Construction (hereinafter referred to as "MOC"), and Vietnam Electricity (hereinafter referred to as "EVN") as follows:

Date and Time : November 17, 2011 13:30-16:30

Place : Meeting room No 206 at MOIT

Participants: **MOIT:**

Science and Technology Dept.: Mr. Dang Hai Dung, Mr. Pham Hoang Nha

Legal Department: Mr. Trung

MOC:

Dept. of Science, Technology and Environment: Mr. Dinh Chinh Loi,

EVN:

Mr. Nguyen Qunag Viet, Nguyen Xuan Khiem,

Electrical Testing Center (ETC):

Mr. Linh, Mr. Duc, Mr. Thanh, Mr. Hai

Center for Water Research and Engineering Application (CRA):

Assoc. Prof. Dr. Le Quang Vinh; Ms. Quynh Anh

JICA Vietnam:

Ms. Murakami Yuka

JICA Project Team:

Mr. Nakamura Shigeru, Mr. Mizuhashi Yutaro, Mr. Umesaki Shuji, Mr. Okada Mototaro,

Mr. Ooyama Yoshio, Mr. Koga Masaaki, Mr. Kuwahara Ken'ichi, Mr. Mori Masayuki, Mr.

Masuda Takayoshi, Ms. Pham Hong Hai

The JICA Project Team and Vietnamese authorities concerned discussed and agreed on the following contents.

Contents:

1. Opening Remarks

Mr. Dung of MOIT gave an opening address, introduced major participants and stated the points of discussions in the 2nd JCC and 5th JMC Meeting.

2. The 5th JMC Meeting

2.1 Work Plan of 2nd Stage

Mr. Nakamura of JICA Project Team explained the work plan of the 2nd stage.

The following were confirmed among the parties concerned:

- Depend on the actual demand, the number of JICA Team mission will be increased from three times

(original plan) to seven times in order to have discussions frequently and more efficiently considering the experience in the first stage. For each mission, the Project Team will provide Vietnam side with specific works and relevant time for confirmation and arrangement by Vietnamese counterpart to achieve efficient cooperation between Japanese side and Vietnamese side.

- JICA Project Team will give high priority to the translation of documents for meetings into Vietnamese and deliver the documents in Vietnamese one month prior to the meetings in order to have discussions efficiently.
- The Vietnamese counterpart proposed that the seventh JICA Team mission should be postponed from March 2012 to May 2012 in order to provide the Vietnamese side with sufficient time for reviewing the documents. JICA Project Team answered that schedule of the seventh JICA Team mission would be shifted to April 2012 instead of May 2012 considering the succeeding schedule of the Project.
- The Vietnamese counterpart proposed that the seventh and eighth JICA Team missions should be integrated into one mission in order to have discussions sufficiently. JICA Project Team answered that the proposed idea of Vietnamese side was not recommended because the draft Guidelines would be developed step by step and it would be too much volume to be discussed efficiently in only one concentrated time.
- Also, the Vietnamese counterpart proposed to shift the schedule of 11th and 12th missions from January 2013 and February 2013 to March 2013 and May 2013 respectively by extending the Project term.
- Regarding the above issues, each party agreed that JICA Project Team would adjust the schedule of missions so as to have effective discussions as much as possible taking into account the opinion of Vietnamese counterpart.
- Regarding the extension of Project term, JICA Project Team also expressed the intention to extend the Project term in principal. The Project Team will clarify the reasons which would be discussed and agreed among the parties concern in the Midterm Review Mission of JICA scheduled in February 2012. Also, the revision of R/D and work flow is required for the change of Project term.
- The Vietnamese counterpart requested JICA Project Team to show detailed work schedule so that the Vietnamese counterpart could arrange the staff properly. JICA Team agreed to the request.
- The Vietnamese counterpart proposed that the number of site investigation should be decreased and that the number of working group meeting should be increased instead. JICA Project Team agreed to it provided that site visits will be conducted depending on the necessity in preparation of draft guidelines.
- JICA Project Team proposed to conduct the baseline surveys in the second stage for 1) accidents and power outages in 2010 and 2011, 2) degree of satisfaction to technical regulations and 3) needs of technical regulations and guidelines. The Vietnamese side recommended JICA Team to conduct the three kinds of baseline surveys simultaneously in one set of questionnaire. JICA Team agreed to the recommended idea.

2.2 General Policy for Development of Guidelines

- JICA Project Team explained and each party reconfirmed the basic concepts for development of the Guidelines and their position.
- The Vietnamese counterpart requested JICA Project Team to improve quality of both English and Vietnamese documents to be used in the Working group meetings. JICA Project Team will make efforts to improve the quality of the documents by paying more attention to the quality of English in the original draft and by providing sufficient time for translation work as much as possible.
- The Vietnamese counterpart requested JICA Project Team not to provide the Guidelines with general or obvious explanation but to provide practical information and also not to have contradictions with the existing laws and regulations. JICA Project Team agreed to and will follow the request.

2.3 Confirmation of PDM and PO of the Project

- Each party agreed to maintain the current PDM attached hereto without change for the present

provided that revision was required if the promulgation schedule of Technical Regulation is changed.

- Each party agreed to revise the current PO by adjusting the schedule based on the actual progress and situation as attached hereto.

3. The 2nd JCC Meeting

3.1 Current Status of Preparation of Final Draft Technical Regulations

- The Vietnamese counterpart of MOIT intends to finalize the Technical Regulations (Vol.1 to Vol.5) for promulgation in six months.
- It is expected however that further revisions on Technical Regulations will be required during the process in development of draft Guideline.
- EVN informed that the independent working groups were established in EVN for hydropower, thermal power and network fields and these working groups would review the final draft of Technical Regulations until April 2012 and would make the final revisions during the 8th mission of JICA Project Team scheduled in July 2012.
- JICA Project Team will provide with the technical support to the activities of Vietnamese counterpart for finalization of Technical Regulations for promulgation.
- As the Technical Regulation for hydropower civil works under MOC is a new one so the development time of its final draft should be extended (according to results of previous meetings) and will be proceeded in the following schedule:
 - 1) JICA Project will submit the pre-final draft (3rd draft) within November 2011.
 - 2) MOC will hold a workshop and provide JICA Team with comments within December 2011.
 - 3) JICA Team will submit the final draft within January 2012.

3.2 Procedure and Schedule of Promulgation of Technical Regulations

- The Vietnamese counterpart of MOIT proposed that the Technical Regulations and Guidelines for Vol.1 to Vol.5 would be promulgated simultaneously. This issue will be discussed in the JICA's Interim Project Review Mission scheduled in February 2012 as the revision of PDM is required for the change of promulgation schedule with regard to the evaluation index for achievement of project target.
- MOC intends to promulgate the Technical Regulation for hydropower civil works in June 2012.



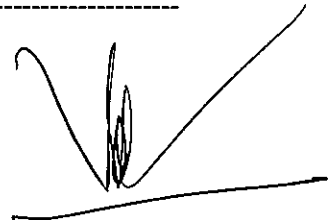
MOIT

*Science & Technology Dept.
Mr. Nguyen Dinh Hiep*



MOC

*Dept. of Science, Technology
& Environmental
Dr. Tran Huu Ha*



EVN

*Deputy Director
Science, Technology
& Environmental Dept.
Mr. Nguyen Quang Viet*



JICA Project Team
*Leader
Mr. Nakamura Shigeru*

Project Design Matrix (PDM)

PDM: Electric Power Technical Standards Promotion Project in Vietnam

Duration: 3 Years (*March in 2010 to January in 2013*)

Implementation Institutions: Ministry of Industry and Trade, Ministry of Construction, Vietnam Electricity (and other concerned institutions)

Target Area: The Whole Vietnam

Direct Target Group: Working Groups

In-direct Target Group: Electric Power Industry in Vietnam

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal: Improve reliability and safety of power supply by means of decreasing electric power disorders caused by failures in design, construction, operation and maintenance through disseminating Technical Standards to electric power industry in Vietnam.</p>	<p>1. Numbers of occurrence in failure and power outage of electric power supply are decreased.</p>	<p>1. MOIT/EVN/MOC failure report</p>	
<p>Project Purpose: Electric power Technical Standards will be enacted and operated effectively and efficiently through disseminating Technical Standards and Guidelines to electric power industry in Vietnam.</p>	<p>1. Numbers of Technical Standards and Guidelines approved as ministerial circulars or codes 2. Numbers of participants/participating companies to workshop for dissemination 3. Degree of satisfaction to Technical Standards and Guidelines by technical staff in electric power industry</p>	<p>1. Ministerial circular notice/Gazette 2. Project record 3. Questionnaire survey</p>	<ul style="list-style-type: none"> • Government policy on the electric power Technical Standards will not be changed drastically.
<p>Outputs: 1. Report of review on existing Technical Standards will be developed. 2. Technical Standards will be revised and developed. 3. Guidelines for Technical Standards will be developed.</p>	<p>1. The report is approved by JMCs 2.1 Technical Standards are timely approved by JMCs 2.2 Technical Standards include contents required by the Vietnamese side. 3.1 Guidelines for Technical Standards are approved by JMCs 3.2 Guidelines for Technical Standards include contents required by the Vietnamese side.</p>	<p>1. Project record 2.1 Project record 2.2 Project record 3.1 Project record 3.2 Project record</p>	<ul style="list-style-type: none"> • Technical Standards are enacted as ministerial circulars or codes as planned. • Appropriate budget of the Vietnamese side for disseminating Technical Standards is secured.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Activities:</p> <p>1.1 Collect existing Technical Standards, related documents and information</p> <p>1.2 Review existing Technical Standards and related documents</p> <p>1.3 Develop the report of review on inconsistency of existing Technical Standards and the resultant problems, and the necessities for improvement</p> <p>2.1 Develop new Technical Standards by Working Groups (“WGs”)</p> <ul style="list-style-type: none"> • <u>WG: Hydro 2</u> (Under MOC): Design, Construction, Completion Inspection • <u>WG: Thermal</u> (Under MOIT): Design for Large-scaled Coal-fired Plant & Gas-combined Cycle <p>2.2 Make revision and addition into the existing Technical Standards by WGs</p> <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Thermal</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Network</u> (Under MOIT): Vol. 1-7 (including Grounding & Lightning Protection) <p>3.1 Prepare framework of Guidelines based on revised and developed Technical Standards by WGs</p> <p>3.2 Develop Guidelines by WGs</p> <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) • <u>WG: Hydro 2</u> (Under MOC) • <u>WG: Thermal</u> (Under MOIT) • <u>WG: Network</u> (Under MOIT) 	<p style="text-align: center;"><u>Inputs: Vietnamese Side</u></p> <p><Personnel Inputs ></p> <ul style="list-style-type: none"> • Joint Management Committee • Technical Working Groups <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) MOC Expert X 1 person 3) MOST Expert X 1 Person 4) EVN Science, Technology & Environment X 1 person 5) EVN Productive Technical Engineer X 1 person • <u>WG: Hydro 2</u> (Under MOC) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) MOIT Expert X 1 person 3) MOST Expert X 1 Person 4) EVN Science, Technology & Environment X 1 person 5) EVN Design Engineer X 1 person 6) MARD (HQ) X 1 person • <u>WG: Thermal</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) MOST Expert X 1 Person 3) EVN Productive Technical Engineer X 1-2 persons 4) Power Plant Productive Technical Engineer (in principle from Plant) X 1 person • <u>WG: Network</u> (Under MOIT): <ol style="list-style-type: none"> 1) MOIT Expert X 3 persons 2) MOST Expert X 1 Person 3) EVN Science, Technology & Environment X 1 person 4) EVN Productive Technical Engineer X 1 person <p><Building & Facilities></p> <ul style="list-style-type: none"> • Project Office Space for Japanese Experts <p><Administration Cost ></p> <ul style="list-style-type: none"> • Necessary cost for hiring consultants supporting JICA Experts • Necessary cost for activities of WG Members (from MOIT & MOC respectively) 	<p style="text-align: center;"><u>Inputs: Japanese Side</u></p> <p><Dispatch of Experts></p> <p><Long-term Expert></p> <ul style="list-style-type: none"> • Chief Advisor <p><Short-term Expert></p> <ul style="list-style-type: none"> • Hydro (civil engineering, electrical) • Thermal (mechanical, electrical) • Network (transmission, substation, distribution) <p><Technical Training in Japan></p> <p>< Workshops></p> <p><Cost></p> <ul style="list-style-type: none"> • Necessary cost for hiring consultants supporting JICA experts <p>< Machinery and Equipment></p> <ul style="list-style-type: none"> • Other machinery such as vehicles and equipment to be agreed mutually upon as necessary for the implementation of the Project 	<ul style="list-style-type: none"> • WGs and JMCs smoothly function as expected. <p><u>Pre-conditions:</u></p> <ul style="list-style-type: none"> • Project Purpose and necessary commitment for the inputs are understood and secured.

Abbreviation:

WG: Working Groups, JMC: Joint Management Committee

Plans of Operation (PO) for Electric Power Technical Standards Promotion in Vietnam (proposed revision)

Calendar Year	Tentative												Person in Charge in the Project	Input	Remarks	
	1st Year				2nd Year				3rd Year							
Duration of the Project	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4				
Output 1: Report of review on inconsistency of existing technical standards and its problems caused, and the necessities for improvement will be developed.																
Activities for Output-1																
Hydro 1 (under MOIT)																
1.1	Collect existing mandatory technical standards, related documents and information	-												C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
1.2	Review existing mandatory technical standards and related documents	-	-											C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
1.3	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement		-											C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
Hydro 2 (under MOC)																
1.1	Collect existing mandatory technical standards, related documents and information	-												C/P in MOC, MOIT, EVN	Long-term Expert, Sort-term Expert	
1.2	Review existing mandatory technical standards and related documents	-	-											C/P in MOC, MOIT, EVN	Long-term Expert, Sort-term Expert	
1.3	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement		-											C/P in MOC, MOIT, EVN	Long-term Expert, Sort-term Expert	
Thermal (under MOIT)																
1.1	Collect existing mandatory technical standards, related documents and information	-												C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
1.2	Review existing mandatory technical standards and related documents	-	-											C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
1.3	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement		-											C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
Network (under MOIT)																
1.1	Collect existing mandatory technical standards, related documents and information	-												C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
1.2	Review existing mandatory technical standards and related documents	-	-											C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
1.3	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement		-											C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
Output 2: Mandatory technical standards will be revised and developed.																
Activities for Output-2																
Hydro 1 (under MOIT)																
2.1	Develop new technical standards by Working Groups	<i>(No new technical standards for Hydro 1)</i>												C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
2.2	Revise the existing technical standards by Working Groups	-	-	-	-	-	-	-	-	-	-	-	-	C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
Hydro 2 (under MOC)																
2.1	Develop new technical standards by Working Groups	-	-	-	-	-	-	-	-	-	-	-	-	C/P in MOC, MOIT, EVN	Long-term Expert, Sort-term Expert	
2.2	Make revision and addition into the existing technical standards by Working Groups	<i>(No existing technical standards for Hydro 2)</i>												C/P in MOC, MOIT, EVN	Long-term Expert, Sort-term Expert	
Thermal (under MOIT)																
2.1	Develop new technical standards by Working Groups	-	-	-	-	-	-	-	-	-	-	-	-	C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
2.2	Make revision and addition into the existing technical standards by Working Groups	-	-	-	-	-	-	-	-	-	-	-	-	C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
Network (under MOIT)																
2.1	Develop new technical standards by Working Groups	<i>(No new technical standards for Network)</i>													Long-term Expert, Sort-term Expert	
2.2	Make revision and addition into the existing technical standards by Working Groups	-	-	-	-	-	-	-	-	-	-	-	-	C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
Output 3: Guidelines for technical standards will be developed.																
Activities for Output-3																
Hydro 1 (under MOIT)																
3.1	Prepare framework of guidelines based on revised and developed technical standards by Working Groups					-								C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
3.2	Develop guidelines by Working Groups					-	-	-	-	-	-	-	-	C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
Hydro 2 (under MOC)																
3.1	Prepare framework of guidelines based on revised and developed technical standards by Working Groups							-						C/P in MOC, MOIT, EVN	Long-term Expert, Sort-term Expert	
3.2	Develop guidelines by Working Groups							-	-	-	-	-	-	C/P in MOC, MOIT, EVN	Long-term Expert, Sort-term Expert	
Thermal (under MOIT)																
3.1	Prepare framework of guidelines based on revised and developed technical standards by Working Groups					-								C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
3.2	Develop guidelines by Working Groups					-	-	-	-	-	-	-	-	C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
Network (under MOIT)																
3.1	Prepare framework of guidelines based on revised and developed technical standards by Working Groups					-								C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
3.2	Develop guidelines by Working Groups					-	-	-	-	-	-	-	-	C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	

Minutes of WG Meeting (General)

Date :	7th February 2012 9:00~11:30
Participants	Shown at Attachment-1
Venue	MOIT Conference room 206
JICA member	Mr. Nakamura (JICA Team leader) Mr. Aki (JICA Network Team) Ms. Nakamura (OPMAC, Observer)
Subject: EVN's Letter,	
<p>1. Purpose and agenda of the meeting</p> <p>Mr. Nakamura (JICA Team leader) explained the purpose of today's meeting.</p> <p>Regarding the EVN letter in caption, the following two (2) issues will be discussed among EVN, MOIT and JICA. In addition to this, JICA will confirm EVN's reply to JICA's questionnaire which was sent to EVN and MOIT prior to this meeting.</p> <ul style="list-style-type: none"> (1) Necessary further action to finalize draft Technical Regulations as Vietnamese laws (2) Improvement in efficiency of discussions on development of draft Guideline <p>2. EVN's opinion</p> <p>Mr. Viet stated EVN's replies to the above-mentioned questionnaire issued to EVN by JICA and EVN's opinion on finalization of draft Technical Regulation and development of draft Guideline.</p> <ul style="list-style-type: none"> (1) There are some inadequacies in the final draft Technical Regulation. And some EVN comments on the 2nd draft Technical Regulation are not properly reflected in the final draft Technical Regulation. For example, application of color of phases and voltage classification are not suitable for actual Vietnam situation of electric facilities. (2) Many technical terms in draft Technical Regulation and draft Guideline in both English version and Vietnamese version are not appropriate so that the contents of draft Technical Regulation and draft Guideline are difficult to understand. On the other hand, in the discussion in WG at 6th JICA mission in November 2011, the contents of draft Guideline were able to be understood by the JICA experts' explanation through the translators from Japanese to Vietnamese. (3) EVN is afraid that necessary discussion for development of draft Guideline cannot be completed by the end of the Project because progress of the discussion on draft Guideline was so slow. (4) EVN requests MOIT to establish Vietnamese working group to discuss the draft Guideline submitted by JICA by itself before technical meeting with JICA. <p>3. JICA Project Team's reply</p> <p>JICA Project Team replied to EVN's opinion as follows.</p> <ul style="list-style-type: none"> (1) In JICA Team's opinion, there are few modifications in the final draft Technical Regulation, because Technical Regulation includes only basic requirements and necessary requirements also are added. 	

- (2) The development of the draft Guideline shall be started immediately. The reason is that it takes a long time to develop the draft Guideline, because the volume of the draft Guideline is much larger than that of the draft Technical Regulation. In this regard, JICA Team cannot await development of the draft Guideline until the draft Technical Regulation is finalized by Vietnam side.
- (3) It is difficult to discuss all articles of the draft Guideline in the WG meetings between JICA and Vietnamese side. Therefore, most of the articles shall be reviewed by only Vietnam side to complete check of all articles. However, whole of the draft Guideline cannot be reviewed at one time by Vietnam side, considering the volume of documents to be reviewed. Therefore, JICA Team proposes that the draft Guideline should be reviewed and discussed step by step and part by part.
- (4) Regarding technical terms and other descriptions in English, JICA is improving the quality of English expressions. And regarding technical terms and other descriptions in Vietnamese, it is not required to modify expressions in draft Guideline in Vietnamese beyond necessity, and both JICA Team and Vietnamese side should focus on technical issues.
- (5) JICA Team will consider comments from Vietnamese side carefully at development of the draft Guideline.

4, Conclusion

Both parties confirmed that there were some matters to be corrected in draft Technical Regulations and draft Guidelines in the today's meeting.

The ways to finalize the draft Technical Regulations and develop the draft Guidelines are as follows.

(1) Final draft Technical Regulations

- Vietnamese side and JICA Team side will review the final draft Technical Regulations, pick up the matters to be modified and put them in writing by the end of March 2012,
- The final draft Technical Regulations shall be finalized according to the result of discussions on the above-mentioned comments. The discussion on finalization of the final draft Technical Regulation is supposed to be held at the 7th JICA Team mission scheduled in the middle of April 2012.
- MOIT is responsible for finalization of the final draft Technical Regulations. In order to complete the finalization, MOIT will establish working groups to discuss this issue.

(2) Draft Guideline

- JICA Team will submit the draft Guidelines as early as possible in order to ensure the duration for review by Vietnamese side.
- Vietnamese side will establish working groups to review the draft Guidelines submitted by JICA Team, and will pick up issues to be discussed with JICA Team in order to have effective discussion between JICA Team and Vietnamese side.

MINUTES OF MEETING
ON
THE THIRD JOINT COORDINATION COMMITTEE
IN
THE TECHNICAL COOPERATION PROJECT
ON
ELECTRIC POWER TECHNICAL STANDARDS PROMOTION IN VIETNAM

Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched the Mid-term Evaluation Mission for the Technical Cooperation Project on Electric Power Technical Standards Promotion in Vietnam (hereinafter referred to as “the JICA Evaluation Mission”) and held the third meeting of the coordination Committee (hereinafter referred to as “JCC”) with Vietnamese authorities concerned including Ministry of Industry and Trade (hereinafter referred to as “MOIT”), Ministry of Construction (hereinafter referred to as “MOC”), Ministry of Agriculture and Rural Development (hereinafter referred to as “MARD”) and Vietnam Electricity (hereinafter referred to as “EVN”) as follows:

Date and Time : February 17, 2012 9:00am-10:30am

Place : Meeting room No 207 at MOIT

Participants: **MOIT:**

Science and Technology Dept.: Deputy Director General Mr. Phan Cong Hop, Mr. Nguyen Duy Hoa, Mr. Le Viet Cuong, Ms. Phan Cam Tu,

MOC:

Dept. of Science, Technology and Environment: Deputy Director General Dr. Tran Huu Ha,

MARD:

Science, Technology and Environment Dept.: Mr. Nguyen Tuan Anh

EVN:

Science, Technology & Environment Dept.: Deputy Director Mr. Nguyen Quang Viet,

Technical & Operational Dept.: Mr. Tran Nam Trung

Electrical Testing Center (ETC):

Mr. Nguyen Quang Trung, Mr. Ngo Thanh

JICA Headquarters:

Electric Power Division, Industrial Development and Public Policy Department: Director Mr. Ito Teruyuki Ito, Mr. Tomitani Takeshi

Consultant for Mid-term Evaluation (under JICA): Ms. Nakamura Hisami

JICA Project Team:

Team Leader Mr. Nakamura Shigeru, Coordinator Ms. Pham Hong Hai

The representatives of JICA and Vietnamese authorities concerned discussed and agreed as follows:

Contents:

1. Opening Remarks

On behalf of MOIT, Mr. Hoa gave an opening address and introduced the participants of Vietnamese side in the 3rd JCC Meeting.

On behalf of the JICA Evaluation Mission, Mr. Ito also gave an opening address expressing appreciation for cooperation of Vietnamese side in the Project, stated the major purpose of mid-term evaluation and important points for the Project, and introduced the participants of Japanese side.

2. Report of Mid-term Evaluation by JICA

Mr. Tomitani of the JICA Evaluation Mission explained the major points in the results of midterm evaluation as follows:

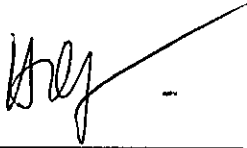
- (1) Technical Standards (Technical Regulations) under MOIT scope
The final review on the current draft of Technical Regulations under the MOIT scope will be completed by the end of March 2012 by both Vietnamese side and JICA expert team. The result of review will be discussed in April 2012 in order to finalize the draft of Technical Regulations. MOIT should be responsible for refining and finalizing the draft in Vietnamese for promulgation.
- (2) Implementation process for drafting the Guidelines
It is recommended to revise the implementation process for drafting the Guidelines in order to improve productivity of the JICA expert team and the WGs. In this regard, the work plan of the development of Guidelines will be also reviewed and discussed in April 2012 in the JCC meeting.
- (3) Project implementation structure of Vietnamese side
It is recommended to take a constructive process for finalizing the draft of Technical Regulations and Guidelines by Vietnamese side.
- (4) Project implementation structure of Japanese side
It is recommended to improve the structure for implementation of the Project activities by Japanese side based on the experiences obtained so far.
- (5) Revision of PDM
It is recommended to review and revise the current PDM based on the draft of revised PDM (version 2) proposed in the Mid-term Evaluation Report. The revision of PDM shall be discussed and concluded in the JCC Meeting scheduled in April 2012.
- (6) Extension of Project Term
It is recommended to extend the Project term by several months taking into account the result of review on the draft of Technical Regulations and the efficient process of drafting Guidelines. The revision of Project term shall be discussed further in the JCC Meeting scheduled in April 2012.

3. Discussion on the result of Mid-term Review

- (1) The representative of MOIT suggested the further review on the achievement of the Project so far and further discussion on the recommendations in the Mid-term Review Report in April 2012.
- (2) The representative of MOC expressed his intention to promulgate the Technical Regulation under scope of MOC in June 2012 and to discuss the workflow for development of Guideline and extension of Project term in April 2012.
The representative of MOC requested JICA expert team to submit the framework of Guideline under the scope of MOC in the beginning of April 2012 in order to discuss the framework in the JCC or WG meeting in April 2012. JICA expert team agreed to the request.
- (3) The representative of EVN requested MOIT to study the change of overall goal in the revised draft PDM proposed in the Mid-term Review Report by JICA for constructive discussion in April 2012.
The representative of EVN expressed his agreement to extend the Project term until June 2013 and also expressed the plan to hold a series of intensive meetings in EVN in March 2012 to review the draft of Technical Regulation and to send the comments to MOIT. To ensure the quality of comments from EVN, EVN proposed JICA to concentrate on the quality of English version as well as the translation quality of Vietnamese version.
EVN proposed that the Technical Regulations and Guidelines shall be promulgated simultaneously and during the revision process JICA will collaborate/cooperate with MOIT and EVN positively to finalize the documents.
- (4) The representative of MARD requested the MOC to avoid conflicts between the new Technical Regulations to be promulgated by MOC under the Project and to be promulgated separately by MARD. The representative of MOC agreed to the request of MARD expressing that a representative of MARD was participating to WG meetings to handle the matter.
- (5) The representative of JICA requested Vietnamese side to discuss the major issues to be discussed in the JCC meeting in April 2012 prior to the meeting. The Vietnamese side agreed to the request.

4. Overall Conclusion on Mid-term Evaluation Report

Each party agreed to the contents of Mid-term Review Report and the Minutes of Mid-term Review and the minutes was signed by the representatives of MOIT, MOC and JICA as attached hereto:



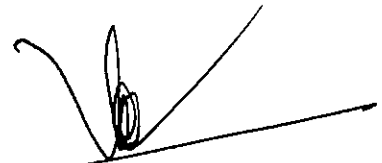
MOIT

*Science & Technology Dept.
Mr. Phan Cong Hop*



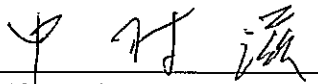
MOC

*Dept. of Science, Technology
& Environmental
Dr. Tran Huu Ha*



EVN

*Deputy Director
Science, Technology
& Environmental Dept.
Mr. Nguyen Quang Viet*



JICA Project Team

Leader

Mr. Nakamura Shigeru

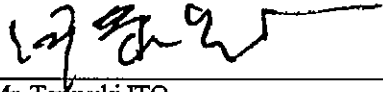
MINUTES OF MEETING
BETWEEN
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF
THE SOCIALIST REPUBLIC OF VIETNAM
AND
MID-TERM REVIEW TEAM OF
THE JAPAN INTERNATIONAL COOPERATION AGENCY
ON
TECHNICAL COOPERATION PROJECT ON
ELECTRIC POWER TECHNICAL STANDARDS PROMOTION PROJECT IN VIETNAM

The Mid-Term Review Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") and headed by Mr. Teruyuki ITO visited the Socialist Republic of Vietnam (hereinafter referred to as "Vietnam") from February 5 to 18, 2012 for the purpose of conducting a mid-term review study on Electric Power Technical Standard Promotion Project in Vietnam.

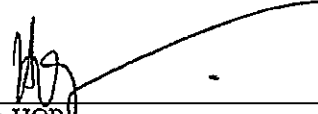
During its stay in Vietnam, the Team had a series of discussions, exchanged views, and compiled a mid-term review report (hereinafter referred to as "the Report") with the authorities concerned of the Government of Vietnam over the matters for the successful implementation of the Project.

As a result of the discussions, both sides agreed upon the matters referred to in the document attached hereto.


Hanoi, February 17, 2012



Mr. Teruyuki ITO
Leader, Mid-Term Review Team,
Japan International Cooperation Agency



Mr. Phan Cong HOP
Deputy Director General
Department of Science and Technology
Ministry of Industry and Trade



Dr. Tran Huu HA
Deputy Director General
Department of Science, Technology and
Environment
Ministry of Construction

ATTACHMENT

1. Recognition of the Mid-Term Review Report

Both sides recognized that the Report was proper, and accepted the recommendations mentioned in the report.

2. Modification of Project Design Matrix (PDM)

Based on the results of mid-term review, it is recommended to modify PDM for successful implementation of the Project in the remaining period. The proposed PDM Version 2 is attached to the Report as Appendix 2. The proposed PDM shall be finalized and agreed by both Japanese and Vietnamese sides at a Joint Coordination Committee (JCC) scheduled in April, 2012.

3. Extension of the Project Period

Based on the results of mid-term review, extension of the project period is recommended in order to finalize the Technical Standards and Guidelines in a successful manner. Taking into account the work volume and the time frame for drafting the Guidelines, extension of the project period in approximately 3 months from "March, 2010 to March 2013" to "March, 2010 to June, 2013" may be reasonable. Details will be discussed in the above JCC in April, 2011, in which the revision of work flow of the remaining project period shall also be discussed. After the JCC, both JICA and the Vietnamese authorities shall proceed to revise the Record of Discussion signed on November 26, 2009.

Appendix : Mid-Term Review Report

Handwritten signature and initials in the bottom right corner of the page.

JOINT MID-TERM REVIEW REPORT
ON THE TECHNICAL COOPERATION PROJECT
ON
ELECTRIC POWER TECHNICAL STANDARDS PROMOTION
PROJECT IN VIETNAM

Ministry of Industry and Trade,
Ministry of Construction
And
Japan International Cooperation Agency (JICA)

Hanoi
The Socialist Republic of Vietnam
February 17th, 2012








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Appendix

- I. Project Design Matrix (Original)
- II. The Proposed Project Design Matrix Version 2
- III. List of Experts
- IV. List of Trainees in Japan
- V. List of Equipment Provided
- VI. Local Cost
- VII. List of Counterparts

1. Framework of Mid-Term Review Study

1-1. Background and Objective of the Mid-Term Review

JICA has conducted “the Study on Technical Standards for Electric Power Industry in Vietnam” from May 2006 to July 2007 in order to prepare for technical and safety standards of electric power sector. Following this study, Technical Cooperation Project titled “Electric Power Technical Standards Promotion Project in Vietnam” was launched on March, 2010 for the period of three years in order to further develop technical standards and their guidelines.

The Mid-Term Review Study Team (hereinafter referred to as “the Team”) dispatched by Japan International Cooperation Agency (JICA) visited Vietnam from February 5 to 18, 2012 for the purpose of examining achievements and process of the Project by the “Five Evaluation Criteria.” Based upon its results, the original project plan may be revised and the operation structure also may be strengthened, if necessary. The Mid-Term Review Study (hereinafter referred to as “the Study”) has been jointly undertaken by the JICA mid-term study team and the Vietnamese authorities concerned.

The objectives of the mid-term evaluation study are as follows:

- (1) To review and assess the inputs, activities and achievements of the Project;
- (2) To identify problems and issues to be addressed for successful implementation of the Project for the remaining period; and
- (3) To propose suggestions for better implementation of the Project in the remaining period and a future plan after the project period.

1-2. Members of the Mid-Term Review Study Mission

The Team is composed of the members as below.

Team Leader	Mr. Teruyuki ITO	Director Electric Power Division, Natural Resources and Energy Group, Industrial Development and Public Policy Department, Japan International Cooperation Agency (JICA)
Cooperation Planning	Mr. Takeshi TOMITANI	Officer Electric Power Division, Natural Resources and Energy Group, Industrial Development and Public Policy Department, Japan International Cooperation Agency (JICA)

Evaluation Analysis	Ms. Hisami NAKAMURA	Deputy General Manager Business Promotion Department, OPMAC Corporation
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1-3. Schedule of the Mid-Term Review Study

The Study in Vietnam was conducted from 5th to 18th February, 2012. The detailed schedule is as follows.

The Study in Vietnam was conducted from 5th to 18th February, 2012. The detailed schedule is as follows.

Date		Mr. Ito	Mr. Tomitani	Ms. Nakamura
Feb	5	sun		<i>Depart from Narita (10:00) to Hanoi (14:40) (VN311)</i>
	6	mon		• Discussion with JICA Office
	7	tue		• Interview with Vietnamese counterparts
	8	wed		• Interview with the project expert (Mr. Nakamura)
	9	thu		• Data collection
	10	fri		• Preparation for the review report
	11	sat		
	12	sun		<i>Depart from Narita (10:00) to Hanoi (14:40) (VN311)</i>
	13	mon		• 9:30: Interview with Vietnamese counterparts • 13:30: Workshop on the Mid-Term Review Survey
	14	tue	<i>Depart from Narita (10:00) to Hanoi (14:40) (VN311)</i>	• Preparation of Minutes of Meeting (M/M), Mid-Term Review Report and PDM
	15	wed		• AM: Preparation of Mid-Term Review Report (the Report) • PM: Courtesy call on MOIT and MOC Discussion on the M/M, the Report and PDM with Vietnamese counterparts with Vietnamese counterparts •
	16	thu		• AM: Discussion on the M/M, the Report and PDM with Vietnamese counterparts • PM: Revision and Confirmation of M/M, the Report and PDM

17	fri	<ul style="list-style-type: none"> •9:00: Reporting the Evaluation Results and Signing of M/M •16:00: Reporting to the Embassy of Japan
18	sat	<i>Depart from Hanoi (0:10) to Narita (7:00) VN310</i>

1-4. Outline of the Project

The outline of the project is shown as follows. The original Project Design Matrix (hereinafter referred to as "PDM") is shown in the Appendix I.

Overall Goal

Improve reliability and safety of power supply by means of decreasing electric power disorders caused by failures in design, construction, operation and maintenance through disseminating Technical Standards to electric power industry in Vietnam.

Project Purpose

Electric power Technical Standards will be enacted and operated effectively and efficiently through disseminating Technical Standards and Guidelines to electric power industry in Vietnam.

Outputs

1. Report of review on existing Technical Standards will be developed.
2. Technical Standards will be revised and developed.
3. Guidelines for Technical Standards will be developed.

Activities

- 1.1 Collect existing Technical Standards, related documents and information
- 1.2 Review existing Technical Standards and related documents
- 1.3 Develop the report of review on inconsistency of existing Technical Standards and the resultant problems, and the necessities for improvement

- 2.1 Develop new Technical Standards by Working Groups ("WGs")
 - WG: Hydro 2 (Under MOC): Design, Construction, Completion Inspection
 - WG: Thermal (Under MOIT): Design for Large-scaled Coal-fired Plant & Gas-combined Cycle
- 2.2 Make revision and addition into the existing Technical Standards by WGs
 - WG: Hydro 1 (Under MOIT): Vol. 5 & 6
 - WG: Thermal (Under MOIT): Vol. 5 & 6
 - WG: Network (Under MOIT): Vol. 1-7 (including Grounding & Lightning Protection)

- 3.1 Prepare framework of Guidelines based on revised and developed Technical Standards by WGs
- 3.2 Develop Guidelines by WGs
 - WG: Hydro 1 (Under MOIT)
 - WG: Hydro 2 (Under MOC)
 - WG: Thermal (Under MOIT)
 - WG: Network (Under MOIT)

1-5. Methodology of Mid-Term Review

The Study is carried out in accordance with the JICA Guideline for Project Evaluation, along with the

following process:

- (1) Assessing progress of the Project based on the plan shown in the Project Design Matrix (PDM) and the Plan of Operation (PO),
- (2) Analyzing the Project by the five evaluation criteria
- (3) Recommending improvements of the Project
- (4) Drawing lessons learned for other similar types of projects

Both quantitative and qualitative data and information were collected for the Study by the following methods.

- Review of the project reports and other relevant documents;
- Questionnaire and/or interview to Japanese experts, Counterparts, and other stakeholders

The five evaluation criteria used for the analysis of the Project are as follows:

- (1) **Relevance:**
Relevance of the Project is consistency of the Project Purpose and the Overall Goal with development policies and needs of Vietnam as well as the ODA policy of Japan towards Vietnam.
- (2) **Effectiveness:**
Effectiveness of the Project is likelihood of achievement of the Project Purpose by the end of the project period as a result of attaining outputs at the time of the Mid-Term Review Study.
- (3) **Efficiency:**
Efficiency of the Project is extent of conversion from the inputs to the outputs assessed from the aspects of achievement of the planned outputs as well as quantity, quality and timing of the inputs by the Japanese and Vietnamese sides.
- (4) **Impact:**
Impacts of the Project are assessed by likelihood of achievement of the Overall Goal, which is the intended impact of the Project and positive and negative, direct and indirect effects resulted or to be resulted by the Project.
- (5) **Sustainability:**
Sustainability of project is continuity of positive effects and benefits resulted by project after completion of project. It is assessed by the institutional, organizational, technical and financial aspects.

2. Project Performance and Implementation Process

2-1. Inputs

The inputs for the Project are shown in the Table 1.

Table 1: Inputs for the Project

Japanese Side	Vietnamese Side
■Experts: 12 experts in 10 areas (49.40MM) Long-term: 1 expert (15.73MM) Short-term: 11 experts in 9 areas (33.77MM)	■Counterpart Personnel: 63 persons
■Training in Japan: 21 trainees received	■Equipment: 2 PCs
■Equipment: Foreign Currency: 0.373 million JPY Local Currency: 42.439 million VND	■Land and Facilities: Project office space in MOIT
■Local Cost: 61.485 million JPY	■Local Cost: Administrative costs for WG activities, site surveys, workshops by EVN, and so forth, and cost for reviewing the drafts

Japanese Side

Inputs by the Japanese side were as planned.

One (1) long-term expert has been dispatched as a team leader and hydropower expert. Other eleven (11) experts were dispatched in short-term basis for the areas of hydropower (civil works, hydromechanical equipment, electrical works, and mechanical equipment), thermal power plant (mechanical equipment and electrical works), and network (transmission system, substation system, distribution system, grounding system, and inspection). The list of experts is attached as Appendix III.

Three (3) training courses of hydropower, thermal power and network were implemented during the period from March to November, 2011. The list of trainees received in Japan is attached as Appendix IV.

The equipment provided by the Japanese sides are office appliances, including projectors and a personal computer. The list of equipment is attached as Appendix V.

The local cost borne by the Japanese side of 61.485 million JPY spend for contracts for local consultants and general activities. The details of local cost are attached as Appendix VI.

Vietnamese Side

Inputs by the Vietnamese side were as planned.

The Vietnamese Side assigned counterpart personnel for the Joint Coordination Committee (JCC),

the Joint Management Committee (JMC) and the three Working Groups (WG) of Hydropower I, Hydropower II, Thermal Power and Network. The counter personnel are personnel belonging to key stakeholders of the Project, including, the Ministry of Industry and Trade (MOIT), the Ministry of Construction (MOC), the Ministry of Agriculture and Rural Development (MARD), Electricity of Vietnam (EVN), Northern Electrical Testing Company (ETC 1), and the Center for Water Research and Engineering Application (CRA). While MOIT supervises technical issues on the power industry in general, MOC and MARD are responsible for technical issues on civil works of water facilities, including hydropower plants. The list of counterpart personnel is attached as Appendix VII.

The project office space has been provided by MOIT. MOIT, MOC and EVN covered necessary administrative cost to held meetings for JMC, JCC, and WGs, site surveys, workshops by EVN and so forth and cost for reviewing the drafts

2-2. Progress of Activities

For the period from March, 2010 to February, 2012, the JICA expert team worked on drafting the technical regulations in Japan and each WGs, including JICA expert team and the key stakeholders of the Vietnamese side, discussed about drafts prepared by the JICA expert team and reflected comments from stakeholders in the electric power sector. During that period, two (2) JCCs and four (4) JMCs were held while details of drafted Technical Regulations were discussed at WGs.

Review of the final draft of the Technical Regulations has been on-going and will be completed by the end of March, 2012. The draft will be finalized in April, 2012.

Table 2: Major Activities Carried Out by the Project (as of February, 2012)

Period	JICA Team	WGs
March, 2010	<ul style="list-style-type: none"> ● Reviewing existing documents ● Drafting a work report 	<ul style="list-style-type: none"> ● 1st JMC ● 1st WGs ● Finalization of the work report
May, 2010	<ul style="list-style-type: none"> ● Reviewing existing documents ● Drafting review reports 	
June – July, 2010		<ul style="list-style-type: none"> ● 2nd WGs ● 3rd WGs ● 2nd JMC ● Finalization of review reports ● Drafting a framework of technical standards
September, 2010	<ul style="list-style-type: none"> ● Reviewing existing documents ● Preparing 1st draft of technical regulations 	
October, 2010		<ul style="list-style-type: none"> ● 4th WGs ● Reviewing additional documents and information ● Reviewing results of baseline survey on accidents and failures of electric power facilities ● 5th WGs to review the 1st draft

Period	JICA Team	WGs
November 2010 - January 2011	<ul style="list-style-type: none"> ● Reviewing existing documents ● Preparing 2nd draft of technical regulations 	
February - March 2011		<ul style="list-style-type: none"> ● 6th WGs to discuss the 2nd draft ● 3rd JMC ● 7th WG (hydro) to confirm revisions of the 2nd draft ● 1st Workshop to consult with stakeholders before finalization of the draft of technical regulations ● 7th WG (thermal) ● 8th WG (hydro)
April - June 2011	<ul style="list-style-type: none"> ● Preparing final draft of technical regulations 	<ul style="list-style-type: none"> ● 7th and 8th WG (network)
June - July 2011		<ul style="list-style-type: none"> ● 2nd Workshop ● 8th WG (thermal) ● 9th WG (network) ● 10th WG (hydro) ● 4th JMC and 1st JCC ● 2nd JCC and 4th JMC
August - November 2011	<ul style="list-style-type: none"> ● Submission of final draft of technical regulations 	
December 2011	<ul style="list-style-type: none"> ● Reviewing the final draft 	<ul style="list-style-type: none"> ● Reviewing the final draft

2-3. Achievement of Outputs

By the time of the Mid-Term Review Study in February, 2012, the Project achieved the Output 1 and mostly achieved the Output 2. Since Technical Guidelines should be developed in the light with an approved Technical Regulations, the activities to produce the Output 3 is planned to start at the second stage of the Project.

The Output 1 to develop a review report on the existing Technical Standards was achieved in July, 2010 as planned.

In terms of the Output 2 to revise and develop the Technical Standards, finalization of the final draft of the Technical Regulations has been on-going. The time schedule for the Output 2 has been slightly delayed due to the larger volume of work load than expected and the quality of the drafted Technical Regulations. These two issues have been induced by interface of language and time constraints. While the JICA expert team prepared the draft in English, the Vietnamese side needed the ones in Vietnamese because their limited English ability. It required more time for translation work and discussions to finalize the drafts. In addition, there is still a room to improve the final draft due to inconsistencies and conflicts among stipulations in the draft of the Technical Standards and with the other related laws and regulations as well as inappropriate stipulations because of insufficient comprehensive reviews of the drafts within the limited time frame.

The current achievement of the Output 2 indicates that the Output 3 may not be likely to be achieved by the end of the Project because development of Technical Guidelines must require more work volume and time frame even though work volume, time frame and resource allocations for each WG

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can be different.

Table 3: Achievement of Outputs (as of February, 2012)

Outputs	Verifiable Indicators	Achievement
1. Report of review on existing Technical Standards will be developed.	The report is approved by JMC	Achieved as planned.
2. Technical Standards will be revised and developed.	2.1. Technical Standards are timely approved by JMCs. 2.2. Technical Standards include contents required by the Vietnamese side.	Mostly achieved and likely to be achieved by the end of the Project despite that finalization process has been going on.
3. Guidelines for Technical Standards will be developed.	3.1 Guidelines for Technical Standards are approved by JMC. 3.2 Guidelines for Technical Standards include contents required by the Vietnamese side.	Not achieved and unlikely to be achieved within the project period and needs to more work volume and time frame..

2-4. Achievement of Project Purpose

The Project aims at enactment and enforcement of the Technical Standards and Guidelines which are revised and developed by the Project. There are two sets of the Technical Standards and the Guidelines which should be promulgated and enforced by MOIT and MOC, respectively. However, promulgation of the Technical Regulations in the scope of MOC is only one achievable target within the current project plan. Hence, it is unlikely to be achieved completely by the end of the Project due to the unrealistic time frame for promulgation of the Technical Regulations and Guidelines and the excluded dissemination activities in the Project.

As mentioned above, in terms of the scope of MOC, the Technical Standards is planned to be promulgated by June of 2012. However, it is difficult to promulgate the Technical Guidelines to be developed by the Project due to a delay in developing the draft of technical regulation and an anticipated larger work volume..

Regarding the scope of MOIT, it is necessary to promulgate the Technical Standards and Guidelines simultaneously. Since the existing technical regulations covers both contents of the revised Technical Standards and Guidelines, promulgation of the Technical Standards without the Guidelines can induce confusions and disruptions in construction and operation of electric power facilities. Therefore, the policy of MOIT to promulgate of the Technical Standards and Guidelines simultaneously is rational. On the other hand, promulgation of the Technical Standards and Guidelines within the project period will hardly be achieved. .

Table 4: Achievement of the Project Purpose

Project Purpose	Verifiable Indicators	Achievement
Electric Power Technical Standards will be enacted and operated effectively and efficiently through disseminating Technical Standards and Guidelines to electric power industry in Vietnam.	<ol style="list-style-type: none"> 1. Numbers of Technical Standards and Guidelines approved as ministerial circulars or codes. 2. Number of participants/participating companies to workshop for dissemination. 3. Degree of satisfaction to Technical Standards and Guidelines by technical staff in electric power industry. 	Unlikely to be achieved completely by the end of the Project due to the necessity of simultaneous promulgations of the Technical Standards and Guidelines for the MOIT scope after the completion of the Project.

2-5. Prospects for Achievement of Overall Goal

The Overall Goal is an intended outcome resulted by the Project. It should be likely to be achieved within three to five years after completion of project.

It is expected that enforcement of the Technical Standards and Guidelines will bring about improvement of reliability and safety of power supply through decrease in electric power disorders caused by failures in design, construction, operation and maintenance. However, since the Project Purpose is unlikely to be achieved by the end of the Project, the Overall Goal is unlikely to be achieved within the expected period.

Also, the contribution of the Project to achievement of the Overall Goal is hardly verified since it is difficult to clarify casual relationship between compliance of the Technical Regulations and Guidelines and failures of power supply.

Table 5: Prospects for Achievement of the Overall Goal

Overall Goal	Verifiable Indicators	Achievement
Improve reliability and safety of power supply by means of decreasing electric power disorders caused by failures in design, construction, operation and maintenance through disseminating Technical Standards to electric power industry in Vietnam.	The number of occurrence in failure and power outage of electric power supply will be decreased.	Unlikely to be achieved within three to five years after the completion of the Project due to the anticipated delay of promulgation of the Technical Standards for the scope of MOIT.

2-6. Implementation Process

The Project has been implemented by the structure shown in the Figure 1.

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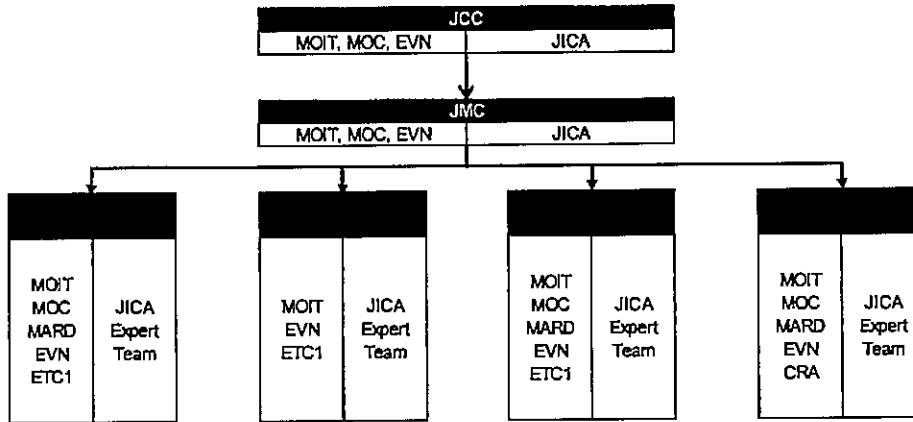


Figure 1: Implementation Structure

The Project set up four WGs: the Hydro Power 1, the Hydro Power 2, the Thermal Power and the Network. While the Hydro Power 2 is responsible for the scope of MOC, the other WGs are responsible for the scope of MOIT. The WGs are composed of the JICA expert team and the counterparts of the Vietnamese side. The main task of the WGs is reviewing for compiling the Technical Standards and Guidelines and reporting about their outputs to the JMC.

For implementation of the Project, the JMC and the JCC were also established. Whereas the JCC is responsible for process of promulgation of the Technical Standards and Guidelines drafted by the Project and provision of overall supports for the Project, the JMC is responsible to manage the project activities and to approve the outputs by the Project.

In order to efficiently draft the Technical Standards, it was planned that the JICA expert teams was going to work on drafting the Technical Standards and Guidelines in Japan and the WGs were going to review and finalize the drafts prepared by the JICA expert teams. While the JICA expert teams prepared drafts of the Technical Standards in English as planned, productivity of the WGs was lower than expected in order to revise and finalize the drafts in Vietnamese. There is a factors to constrain the productivity of the WGs; the insufficient comprehensive review process by the both sides of Japan and Vietnam for quality control of the drafts including the limited interface between languages and technical contents.

Since the most WG members of the Vietnamese side have limited English ability, the drafts in English prepared by the JICA expert team needed to be translated into Vietnamese in order to review and discuss on details of the drafts through the WGs. The inadequate translations in Vietnamese required more time for the Vietnamese counterparts to look through the drafts before the meetings of

the WGs or the JMC.

Due to the lack of comprehensive reviews of all the drafted Technical Standards by the JICA expert teams, there are still inconsistency and conflictions among the stipulations as well as against other related laws and regulations. It is mostly due to the tight schedule of the project implementation. In addition, the local consultants could not review the contents of the drafts effectively in order to avoid such inconsistency and conflictions and to reflect the situations of the Vietnamese power industry since they spent their time for the translation work.

On the other hand, the WG members could not organize enough internal meetings by the initiative of the Vietnamese side before the WG or JMC meetings under the participation of the JICA expert teams and the Vietnamese counterparts. The Vietnamese side felt difficulty to compile constructive and organized comments and counteroffers on the drafts from the Vietnamese side because of limited lead time to review the drafts prepared by the JICA expert team as mentioned above and deliveries of the drafts part by part to the Vietnamese side.

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3. Evaluation by Five Evaluation Criteria

3-1. Relevance

Relevance of the Project is high and it is expected to keep the relevance until the end of the Project.

(1) Consistency with the development needs of Vietnam

According to the latest forecast, in Vietnam, the total power demand will reach to 329,400GWh by 2020. In order to meet the growing power demand, construction of electric power facilities, including power plants, transmission lines and substations, has been promoted under the 7th Power Development Master Plan (PDP). In addition, the government of Vietnam has been implementing the power sector reform, including liberalization of the power market.

Under such situation, reliable and safe supply of electric power is a key issue in the power sector of Vietnam. Therefore, revision and development of the Electric Power Technical Standards and Guidelines is consistent with the development needs of Vietnam for improvement of reliability and safety of power supply through compliance of adequate technical regulations.

(2) Adequacy of Project Approach and Design

JICA supported to revise the volume 5 to 7 of the existing technical regulations through the Development Study conducted from May, 2005 to June, 2007. The revised volumes of the technical regulations and the safety regulations were promulgated in December, 2009. However, it has been still necessary to revise the rest of parts of the technical regulations and to develop additional technical standards and guidelines in order to ensure reliability and safety of power supply. Thus, the project approach and design to revise and develop adequate technical standards and guidelines for the power industry in Vietnam is adequate to meet the needs of Vietnam.

(3) Consistency with the Japanese ODA policy

The Country Assistance Program for Vietnam, which was developed by the government of Japan, sets forth the priority areas for the Official Development Assistance (ODA) by Japan. "Stable supplies for resource of energy" is one of the priority areas. It is expected that the Project will contribute to stable power supply through compliance of appropriate technical standards and guidelines for the power industry in Vietnam. Therefore, the Project is consistent with the Japanese ODA policy.

3-2. Effectiveness

At the time of the Mid-Term Review, effectiveness of the Project is limited. It is necessary to revise the PDM in order to ensure effectiveness of the Project.

Within the current PDM, it is expected that effectiveness of the Project is likely to be limited since the Project Purpose is unlikely to be achieved by the end of the Project as mentioned above. That is because that MOIT needs to promulgate the technical standards and guidelines at the same time in

order to avoid confusions and disruptions in the power industries. Therefore, it is inevitable to revise the Project Purpose and its verifiable indicators, which should be achievable by the end of the project period.

3-3. Efficiency

Efficiency of the Project is fair.

By the time of the Mid-Term Review, the inputs by the both sides of Japan and Vietnam were as planned. Technical level and knowledge of the Japanese experts and the Vietnamese counterparts is sufficient to produce the outputs as planned.

However, there is a concern that the planned outputs may not be produced within the project period because of the larger work volumes than expected. The expansion of work volume was caused by the difficulty in translation work, the limited quality control of drafts as mentioned in the section 0.

In addition, after the JICA expert team submitted the final drafts of the Technical Standards in August, 2011, the finalization process by the both sides of Japan and Vietnam has been going on in order to comprehensively review whole contents of the drafts and to remove any inconsistencies, confictions, misuses of technical terms and other problems and to refine the drafts in Vietnamese to be approved by the JMC. Also revisions of the drafted Technical Standards may be needed during the compiling process of the Guidelines. It requires a longer time frame than the plan.

Therefore, it is necessary to extend the project period and to improve implementation arrangement in order to ensure the planned outputs. Also efficient utilization of human resources is a key issue to improve efficiency of the Project.

3-4. Impact

(1) Achievement of Overall Goal

As mentioned in 2-5, the Overall Goal is unlikely to be achieved as an intended outcome of the Project since the Project Purpose is unlikely to be achieved by the end of the Project. Therefore, it is necessary to reset the Overall Goal according to the revised Project Purpose.

(2) Other impact

At the time of the Mid-Term Review, any positive or negative impacts were not observed.

3-5. Sustainability

In the case of the Project, sustainability can be verified by dissemination and compliance of the

Technical Standards and Guidelines after promulgation. Also timely updating and revision of these documents by MOIT and MOC is a key to ensure sustainability. It is expected that sustainability of the Project will be high from the following aspects.

(1) Policy /institutional aspect

Once the Technical Standards and Guidelines are promulgated, the stakeholders in the electric power industry are required to comply with them. Also the Law on Technical Regulations and Standards stipulates criteria to update and inspect the Technical Standards and Guidelines. Therefore, the legislative system in Vietnam endorses dissemination and compliance of the Technical Standards and Guidelines as well as necessary updates.

(2) Organization aspect

After promulgation of the Technical Standards and Guidelines, MOIT and MOC are responsible to disseminate them to the public through the three channels: ministerial official documents, website of ministry, and workshops or trainings. Although it is unclear whether workshops and trainings are carried out or not, the minimum requirement to disseminate the Technical Standards and Guidelines shall be fulfilled by MOIT and MOC.

In terms of updates of the Technical Standards and Guidelines, MOIT and MOC can mobilize necessary human resources for expert team from the stakeholders, such as EVN, ETC1, CRA, and other institutions despite that the ministries do not have enough technical experts.

Thus, it seems that there is no serious constraint against the sustainability of the expected effects resulted by the Project from the organizational aspects.

(3) Technical aspect

MOIT and MOC have capable officers with enough experience in compiling revisions and developments of technical regulations. Also, experts of EVN, ETC and CRA have sufficient level of technical knowledge and experiences to review technical regulations despite of limited knowledge about the new technologies which are newly introduced in Vietnam.

(4) Financial aspect

It is expected that MOIT and MOC can allocate enough budget to disseminate and to update technical regulations because they have carried out revision and promulgations of other technical regulations. In particular, MOIT revised the Volume 1-4 of the existing technical regulations before the Project. Therefore, financial issues may not harm sustainability of the Project though it is unclear whether MOC can allocate budget for workshops and trainings for dissemination.

3-6. Conclusion

Since the Project has been consistent with the development needs of Vietnam and the Japanese ODA

policy, the Project keeps high relevance. However, the revision of PDM is indispensable for the Project in order to ensure its effectiveness and efficiency and to enhance positive impacts of the Project. Due to the policy and legislative endorsement and organizational and technical capacity of MOIT, MOC and other stakeholders, the intended effects and benefits of the Project can be sustainable. Therefore, it is expected that the Project may be satisfactory at the end of the Project.

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4. Recommendations and Lessons Learned

4-1. Recommendations

1) Reconciliation Efforts for Finalizing the Drafts of the Technical Standards of the MOIT Scope

Since the finalization process for the draft of the Technical Standards has not been completed, through the Mid-Term Review process, MOIT and the JICA expert team mutually agreed that the both sides will conduct comprehensive reviews on the drafted Technical Standards of the MOIT scope and compile comments and counteroffers how to improve and refine the draft by the end of March, 2012.

Based on the results of the reviews, the both sides of MOIT and the JICA expert team need to discuss and reconcile how to refine and finalize the draft in order to ensure promulgate practical and effective technical regulations for the power industry in Vietnam. Whereas the JICA expert team should be responsible for the quality of the draft in English and practical advices for the Vietnamese side from the technical aspect, MOIT should be responsible for refining and finalizing the draft in Vietnamese for promulgation. In particular, MOIT needs to reconcile and compile constructive and rational comments and counteroffers in English from the stakeholders. Joint efforts by the both sides of Japan and Vietnam are crucial to finalize the draft with sufficient quality.

2) Rearrangement of Implementation Process for Drafting the Guidelines of Technical Standards

The result of the Study indicates that the implementation arrangement for drafting the Technical Standards has not been very effective and efficient to produce the draft with sufficient quality due to the limited interface of language and the limited time frame. In order to improve productivity of the JICA expert team and the WGs, it is essential to rearrange the implementation process for drafting the Guidelines.

For the JICA expert team, it is recommended to utilize expertise of the local consultants, such as ETC 1 and CRA, in order to reflect the Vietnamese situations and to avoid inconsistency and conflictions against the other existing laws and regulations. Also, it is better to spend enough time to review drafts within the team to improve quality of drafts in English. In addition, it is recommended that the JICA expert team provide practical and useful technical advices for the Vietnamese side in order to finalize the Technical Guidelines for promulgation.

For the Vietnamese side, it is recommended to utilize their expert team in order to compile constructive comments and counteroffers for drafting Vietnamese version of the Guidelines. In particular, it is critical for the Vietnamese side to have subgroup discussions before the joint meetings with the JICA expert team at the WGs or the JMC. In addition, the WG and JMC members should be rational to compile constructive comments and counteroffers in order to revise

and refine the drafts.

For the both sides of Japan and Vietnam, it is strongly recommended to make productive and constructive joint efforts for maximization of effects and impacts of the Project through effective drafting of the Guidelines.

3) Revision of Workflow for the 2nd Stage of the Project

The detailed workflow of the Project is necessary to be revised in order to reflect recommendations as mentioned above. The revision of the workflow, including the both MOIT and MOC scopes, can be finalized and agreed by the both sides of Japan and Vietnam at JMC to be scheduled in April, 2012. The Table 6 shows the proposed key revisions of schedule concerning the MOIT scope.

Table 6: The Proposed Revision of Schedule

Period	JICA Expert team	Vietnamese Side
By the end of March, 2012	<ul style="list-style-type: none"> ● Comprehensive review of the drafts of the Technical Standards ● Compiling comments to finalize the drafts 	<ul style="list-style-type: none"> ● Comprehensive review of the drafts of the Technical Standards by an expert team organized by MOIT ● Compiling comments to finalize the drafts in English
April, 2012	<ul style="list-style-type: none"> ● Discussion and reconciliation to refine and finalize the drafts for promulgation at JMC 	
April – June 2012	<ul style="list-style-type: none"> ● Drafting the Guidelines 	<ul style="list-style-type: none"> ● Finalizing the drafts of the Technical Standards for promulgation
July-September, 2012	<ul style="list-style-type: none"> ● Discussions on the 1st drafts of the Guidelines at WGs/JMC and Workshop 	
January, 2013	<ul style="list-style-type: none"> ● Discussions on the final drafts of the Guidelines at WGs/JMC and Workshop 	
April, 2013	<ul style="list-style-type: none"> ● Wrap-up meeting for approving the drafts of the Guidelines in English at JMC 	
June, 2013	<ul style="list-style-type: none"> ● JCC for completion of the Project 	

4) Extension of Project Period

In the course of the Study, it has been recognized that, in order to finalize the Technical Standards and Guidelines in a successful manner, the project period should be extended. Taking into account the work volume and the time frame for drafting the Guidelines, extension of 3 months may be reasonable despite that discussions at the JMC in April, 2012 are required for conclusion. In other words, the project period may change from “March 2010 to March 2013” to “March 2010 to June, 2013.” Since the extension of the project period requires a revision of the Record of Discussion signed on November 26, 2009, final decision can be done after internal processes of the both sides of JICA and the Vietnamese authorities.

5) Revision of PDM

Based on the above results of the Study, it is recommended to revise PDM. The proposed PDM

Version 2 is as appendix 2. The PDM Version 2 can be finalized and agreed by the both sides of Japan and Vietnam at JCC to be scheduled in April, 2012.

4-2. Lessons Learned

More Flexible Approach of Technical Cooperation for Development of Technical Standards

It is difficult for the both sides of Japan and counterparts to precisely estimate work volumes and time frame to draft electric power technical standards and guidelines due to the time consuming process to grasp the existing situations, including the existing issues and the relevant laws and regulations, and to reflect the needs from different stakeholders which are often inconsistent and conflicting. Therefore, the project approach and design, including project purpose, outputs, inputs and implementation arrangement and structure, should be modified flexibly and timely in the course of project implementation.

Also, in the case that the target country has sufficient human resources with appropriate technical level, it is essential to mobilize and utilize capable local human resources in order to implement a project effectively. The mobilization of local human resources enables more effective use of technical knowledge and experiences of Japanese experts. Thereby, Japanese experts are able to focus more on project management and quality control for more effective technical transfer and capacity building of counterparts.

(END)

Project Design Matrix (PDM) Version 1

PDM: Electric Power Technical Standards Promotion Project in Vietnam

Duration: 3 Years (*March in 2010 to January in 2013*)

Implementation Institutions: Ministry of Industry and Trade, Ministry of Construction, Vietnam Electricity (and other concerned institutions)

Target Area: The Whole Vietnam

Direct Target Group: Working Groups

In-direct Target Group: Electric Power Industry in Vietnam

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal: Improve reliability and safety of power supply by means of decreasing electric power disorders caused by failures in design, construction, operation and maintenance through disseminating Technical Standards to electric power industry in Vietnam.</p>	<p>1. Numbers of occurrence in failure and power outage of electric power supply are decreased.</p>	<p>1. MOIT/EVN/MOC failure report</p>	
<p>Project Purpose: Electric power Technical Standards will be enacted and operated effectively and efficiently through disseminating Technical Standards and Guidelines to electric power industry in Vietnam.</p>	<p>1. Numbers of Technical Standards and Guidelines approved as ministerial circulars or codes 2. Numbers of participants/participating companies to workshop for dissemination 3. Degree of satisfaction to Technical Standards and Guidelines by technical staff in electric power industry</p>	<p>1. Ministerial circular notice/Gazette 2. Project record 3. Questionnaire survey</p>	<p>• Government policy on the electric power Technical Standards will not be changed drastically.</p>
<p>Outputs: 1. Report of review on existing Technical Standards will be developed. 2. Technical Standards will be revised and developed. 3. Guidelines for Technical Standards will be developed.</p>	<p>1. The report is approved by JMCs 2.1 Technical Standards are timely approved by JMCs 2.2 Technical Standards include contents required by the Vietnamese side. 3.1 Guidelines for Technical Standards are approved by JMCs 3.2 Guidelines for Technical Standards include contents required by the Vietnamese side.</p>	<p>1. Project record 2.1 Project record 2.2 Project record 3.1 Project record 3.2 Project record</p>	<p>• Technical Standards are enacted as ministerial circulars or codes as planned. • Appropriate budget of the Vietnamese side for disseminating Technical Standards is secured.</p>

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Activities:</p> <p>1.1 Collect existing Technical Standards, related documents and information</p> <p>1.2 Review existing Technical Standards and related documents</p> <p>1.3 Develop the report of review on inconsistency of existing Technical Standards and the resultant problems, and the necessities for improvement</p> <p>2.1 Develop new Technical Standards by Working Groups ("WGs")</p> <ul style="list-style-type: none"> • <u>WG: Hydro 2</u> (Under MOC): Design, Construction, Completion Inspection • <u>WG: Thermal</u> (Under MOIT): Design for Large-scaled Coal-fired Plant & Gas-combined Cycle <p>2.2 Make revision and addition into the existing Technical Standards by WGs</p> <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Thermal</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Network</u> (Under MOIT): Vol. 1-7 (including Grounding & Lightening Protection) <p>3.1 Prepare framework of Guidelines based on revised and developed Technical Standards by WGs</p> <p>3.2 Develop Guidelines by WGs</p> <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) • <u>WG: Hydro 2</u> (Under MOC) • <u>WG: Thermal</u> (Under MOIT) • <u>WG: Network</u> (Under MOIT) 	<p style="text-align: center;"><u>Inputs: Vietnamese Side</u></p> <p><Personnel Inputs ></p> <ul style="list-style-type: none"> • Joint Management Committee • Technical Working Groups <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) MOC Expert X 1 person 3) MOST Expert X 1 Person 4) EVN Science, Technology & Environment X 1 person 5) EVN Productive Technical Engineer X 1 person • <u>WG: Hydro 2</u> (Under MOC) <ol style="list-style-type: none"> 1) MOC Expert X 1-2 persons 2) MOIT Expert X 1 person 3) MOST Expert X 1 Person 4) EVN Science, Technology & Environment X 1 person 5) EVN Design Engineer X 1 person 6) MARD (HQ) X 1 person • <u>WG: Thermal</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) MOST Expert X 1 Person 3) EVN Productive Technical Engineer X 1-2 persons 4) Power Plant Productive Technical Engineer (in principle from Plant) X 1 person • <u>WG: Network</u> (Under MOIT): <ol style="list-style-type: none"> 1) MOIT Expert X 3 persons 2) MOST Expert X 1 Person 3) EVN Science, Technology & Environment X 1 person 4) EVN Productive Technical Engineer X 1 person <p><Building & Facilities></p> <ul style="list-style-type: none"> • Project Office Space for Japanese Experts <p><Administration Cost ></p> <ul style="list-style-type: none"> • Necessary cost for hiring consultants supporting JICA Experts • Necessary cost for activities of WG Members (from MOIT & MOC respectively) 	<p style="text-align: center;"><u>Inputs: Japanese Side</u></p> <p><Dispatch of Experts></p> <p><Long-term Expert></p> <ul style="list-style-type: none"> • Chief Advisor <p><Short-term Expert></p> <ul style="list-style-type: none"> • Hydro (civil engineering, electrical) • Thermal (mechanical, electrical) • Network (transmission, substation, distribution) <p><Technical Training in Japan></p> <p>< Workshops></p> <p><Cost></p> <ul style="list-style-type: none"> • Necessary cost for hiring consultants supporting JICA experts <p>< Machinery and Equipment></p> <ul style="list-style-type: none"> • Other machinery such as vehicles and equipment to be agreed mutually upon as necessary for the implementation of the Project 	<ul style="list-style-type: none"> • WGs and JMCs smoothly function as expected. <p><u>Pre-conditions:</u></p> <ul style="list-style-type: none"> • Project Purpose and necessary commitment for the Inputs are understood and secured.

Abbreviation:

WG: Working Groups, JMC: Joint Management Committee

Proposed Project Design Matrix (PDM) Version 2

Project Title: Electric Power Technical Standards Promotion Project in Vietnam

Executing Agencies: Ministry of Industry and Trade (MOIT), Ministry of Construction (MOC), Vietnam Electricity (EVN), (and other organizations concerned)

Target Area: Vietnam

Target Group: Electric power industries in Vietnam

Project Period: Three Years from March, 2010 to June 2013

Version Number: PDM Ver. 2

Date: February 17, 2012

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal: The Electric Power Technical Standards and Guidelines shall be enforced to ensure improvement of reliability and safety of power supply in Vietnam.</p>	<p>(Details will be specified in the terminal evaluation.)</p> <ol style="list-style-type: none"> 1. The Electric Power Technical Standards and Guidelines are promulgated by MOIT by the end of 2014. 2. The Technical Guidelines concerning civil works of hydropower plants is promulgated by MOC by the end of 20XX. 3. Designs of newly constructed electric power facilities are permitted according to the Electric Power Technical Standards and Guidelines. 4. Completion inspections of newly constructed electric power facilities are conducted according to the Electric Power Technical Standards and Guidelines. 5. Regular inspections on operation and maintenance of electric power facilities are conducted and reported by operators to MOIT according to the Electric Power Technical Standards and Guidelines. 	<p>(Details will be specified in the terminal evaluation.)</p> <ol style="list-style-type: none"> 1. Documents of MOIT 2. Documents of MOC 	
<p>Project Purpose: The Electric Power Technical Standards and Guideline are authorized by the Vietnamese authorities.</p>	<ol style="list-style-type: none"> 1. The final draft of the Electric Power Technical Standards in the scope of MOIT is approved by JMC by June 2013. 2. The final draft of the Electric Power Technical Guidelines in the scope of MOIT is approved by JMC by June 2013. 3. The Technical Standards concerning civil works of hydropower plants in the scope of MOC is promulgated by June 2012. 4. The final draft of Technical Guidelines concerning civil works of hydropower plants in the scope of MOC is approved by JMC by June 2013. 	<ol style="list-style-type: none"> 1. Minutes of Meeting on JMC 2. Minutes of Meeting on JMC 3. Official documents of MOC 4. Minutes of Meeting on JMC 	<p>Government policy concerning the Electric Power Technical Regulations will be remained.</p>

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Outputs:</p> <ol style="list-style-type: none"> 1. Report of review on existing Technical Standards is developed. 2. Drafts of the Technical Standards are developed. 3. Drafts of the Guidelines for Technical Standards are developed. 	<ol style="list-style-type: none"> 1. The report is approved by JMCs by July, 2010. 2.1. The final drafts of the Electric Power Technical Standards in English are submitted to JMC by August, 2011. 2.2 The final draft of the Technical Standards of the MOIT scope in Vietnamese is refined by the MOIT expert team by April, 2013. 2.3 The final draft of the Technical Standards of the MOC scope in Vietnamese is refined by the MOC expert team by April, 2012. 3.1 The final drafts of the Electric Power Technical Guidelines are submitted to JMC by April, 2013. 3.2 The final draft of the Technical Guidelines of the MOIT scope is refined by the MOIT expert team by the end of May, 2013. 3.3 The final draft of the Technical Guidelines of the MOC scope is refined by the MOC expert team by the end of May, 2013. 	<ol style="list-style-type: none"> 1. Minutes of meeting on JMC 2.1 Project record 2.2 Project record 3.1 Project record 3.2 Project record 	
<p>Activities:</p> <ol style="list-style-type: none"> 1.1 Collect existing Technical Standards, related documents and information 1.2 Review existing Technical Standards and related documents 1.3 Develop the report of review on inconsistency of existing Technical Standards and the resultant problems, and the necessities for improvement 2.1 Develop new Technical Standards by Working Groups ("WGs") <ul style="list-style-type: none"> • <u>WG: Hydro 2</u> (Under MOC): Design, Construction, Completion Inspection • <u>WG: Thermal</u> (Under MOIT): Design for Large-scaled Coal-fired Plant & Gas-combined Cycle 2.2 Make revision and addition into the existing Technical Standards by WGs <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Thermal</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Network</u> (Under MOIT): Vol. 1-7 (including Grounding & Lightning Protection) 2.3 Review the final drafts of Technical Standards in English and Vietnamese comprehensively 3.1 Prepare framework of Guidelines based on revised and developed Technical Standards by WGs 3.2 Develop Guidelines by WGs <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) • <u>WG: Hydro 2</u> (Under MOC) 	<p style="text-align: center;">Inputs: Vietnamese Side</p> <p><Personnel Inputs ></p> <ul style="list-style-type: none"> • Joint Management Committee • Technical Working Groups <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) MOC Expert X 1 person 3) EVN Science, Technology & Environment X 1 person 4) EVN Productive Technical Engineer X 1 person • <u>WG: Hydro 2</u> (Under MOC) <ol style="list-style-type: none"> 1) MOC Expert X 1-2 persons 2) MOIT Expert X 1 person 3) EVN Science, Technology & Environment X 1 person 4) EVN Design Engineer X 1 person 5) MARD (HQ) X 1 person • <u>WG: Thermal</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) EVN Productive Technical Engineer X 1-2 persons 3) Power Plant Productive Technical Engineer (in principle from Plant) X 1 person 	<p style="text-align: center;">Inputs: Japanese Side</p> <p><Dispatch of Experts></p> <p><Long-term Expert></p> <ul style="list-style-type: none"> • Chief Advisor <p><Short-term Expert></p> <ul style="list-style-type: none"> • Hydro (civil engineering, electrical) • Thermal (mechanical, electrical) • Network (transmission, substation, distribution) <p><Technical Training in Japan></p> <p>< Workshops ></p> <p><Cost></p> <ul style="list-style-type: none"> • Necessary cost for hiring consultants supporting JICA experts <p>< Machinery and Equipment ></p> <ul style="list-style-type: none"> • Other machinery such as vehicles and equipment to be agreed mutually upon as necessary for the implementation of the Project 	<p>Pre-conditions:</p> <ul style="list-style-type: none"> • Project Purpose and necessary commitment for the Inputs are understood and secured.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<ul style="list-style-type: none"> • <u>WG: Thermal</u> (Under MOIT) • <u>WG: Network</u> (Under MOIT) <p>3.3 Review the drafts of Technical Guidelines in English and Vietnamese comprehensively</p>	<ul style="list-style-type: none"> • <u>WG: Network</u> (Under MOIT): <ol style="list-style-type: none"> 1) MOIT Expert X 3 persons 2) EVN Science, Technology & Environment X 1 person 3) EVN Productive Technical Engineer X 1 person • Expert team (MOIT) • Expert team (MOC) <p><Building & Facilities></p> <ul style="list-style-type: none"> • Project Office Space for Japanese Experts <p><Administration Cost ></p> <ul style="list-style-type: none"> • Necessary cost for activities of WG Members (from MOIT & MOC respectively) 		

Abbreviation: WG: Working Groups, JMC: Joint Management Committee

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Appendix III. List of Japanese Experts

Name		Assignment	Period	Office affiliated	1st ST MM	2nd ST MM	Total MM
(Long-term)							
SHIGERU	NAKAMURA	Team Leader / Hydropower Expert A	(1st Stage) 10.3.9~10.3.23 10.6.2~10.9.19 10.10.7~10.11.9 10.12.1~11.4.2 11.4.17~11.6.4 11.6.19~11.7.7 (2ns Stage) 11.10.6~11.12.24 12.1.8~12.3.24	Electric Power Development Co., Ltd. (J-Power)	10.90	4.83	15.73
(Short-term)							
YUTARO	MIZUHASHI	Hydropower Expert B (Civil Works)	(1st Stage) 10.3.13-10.3.21 10.6.21-7.14 10.10.7-10.30 11.3.3-3.17 11.6.19-7.16 (2nd Stage) 11.11.10-11.23	Electric Power Development Co., Ltd. (J-Power)	3.00	0.47	3.47
SHUJI	UMESAKI	Hydropower Expert C (Hydromechanical Equipment)	(1st Stage) 10.6.21-7.14 10.10.10-10.19 11.3.3-3.17 11.6.19-7.6 (2nd Stage) 11.11.14-11.22	Electric Power Development Co., Ltd. (J-Power)	2.23	0.30	2.53
MOTOTARO	OKADA	Hydropower Expert D (Electrical Works)	(1st Stage) 10.3.13-3.2 10.6.2-6.12 10.10.10-11.2 11.3.3-3.17 11.6.19-7.6 (2nd Stage) 11.11.13-11.23	Electric Power Development Co., Ltd. (J-Power)	2.57	0.37	2.94

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YOSHIO	OOYAMA	Thermal Power Expert A (Mechanical Equipment A)	10.3.13-3.21 10.6.21-7.29 10.10.10-11.2 11.2.22-3.17 11.6.19-7.6 11.11.12-11.25		3.80	0.47	4.27
HIROAHI	IMAMURA	Thermal Power Expert B (Electrical Works A)	(1st Stage) 10.3.13-3.21 10.6.21-7.29 10.10.12-10.23 11.3.3-3.17 11.6.19-7.6 (2nd Stage) 11.6.19-7.6		3.10	0.30	3.40
MASAAKI	KOGA	Thermal Power Expert C (Mechanical Equipment B)	(1st Stage) 10.6.21-10.7.14 10.10.10-11.2 11.2.22-3.17 11.6.19-7.6 (2nd Stage) 11.11.13-11.26		3.00	0.47	3.47
TAKASHI	EGASHIRA	Thermal Power Expert D (Electrical Works B)	(1st Stage) - (2nd Stage) -		0.00	0.00	0.00
KENICHI	KUWAHARA	Network Expert A (Transmission System)	(1st Stage) 10.3.13-3.21 10.6.21-7.29 10.10.7-10.30 11.2.22-3.17 11.6.20-7.7 (2nd Stage) 11.11.8-11.19	Shikoku Electric Power Co., Inc.	3.80	0.40	4.20

TOSHIO	AKI	Network Expert B (Substation System)	(1st Stage) 10.3.14-3.21 10.6.20-7.29 10.10.10-11.2 11.3.8-3.16 11.5.4-11.5.18 11.6.19-7.6 (2nd Stage) 11.11.21-12.3	Shikoku Electric Power Co., Inc.	3.80	0.43	4.23
YOSHITETSU	FUJISAWA	Network Expert C (Distribution System)	(1st Stage) 10.6.21-7.3 10.10.7-10.30 (2ns Stage)	Shikoku Electric Power Co., Inc.	1.23	0.00	1.23
TSUGUHIRO	YAMADA	Network Expert C (Distribution System)	(1st Stage) 11.5.4-5.17 11.6.19-7.6 (2nd Stage) 11.11.8-11.12	Shikoku Electric Power Co., Inc.	1.07	0.17	1.24
TAKAYOSHI	MASUDA	Network Expert D (Grounding System)	(1st Stage) 10.6.20-7.13 10.10.10-10.21 11.3.3-11.3.17 11.6.19-7.6 (2nd Stage) 11.14-11.25	Shikoku Electric Power Co., Inc.	2.30	0.40	2.70
SHIGEO	FUJINO	Network Expert E (Inspection)	(1st Stage) - (2nd Stage) -	Shikoku Electric Power Co., Inc.	0.00	0.00	0.00
Total MM					40.80	8.60	49.40





Appendix IV. List of Trainees Recieved in Japan

Mr. Do Duc Quan	Deputy Director General / Energy Department, MOIT (Ministry of Industry and Trade)	Hydropower	2010	2010 November 15 to November 22	Technical Standards and Guidelines
Mr. Dinh Vu Thanh	Deputy Director General / Department of Science - Technology and Environment, MARD (Ministry of Agriculture and Rural Development)	Hydropower	2010	2010 November 15 to November 22	Technical Standards and Guidelines
Mr. Phan Duy Phuu	Hydropower Expert / Energy Department, MOIT (Ministry of Industry and Trade)	Hydropower	2010	2010 November 15 to November 22	Technical Standards and Guidelines
Mr. Tran Viet Hoa	Manager of Division / Department of Science and Technology, MOIT (Ministry of Industry and Trade)	Hydropower	2010	2010 November 15 to November 22	Technical Standards and Guidelines
Mr. Duong Khac Hien	Hydropower Expert / Department of Science and Technology, MOIT (Ministry of Industry and Trade)	Hydropower	2010	2010 November 15 to November 22	Technical Standards and Guidelines
Mr. Pham Thanh Trung	Officer / Legal Department, MOIT (Ministry of Industry and Trade)	Hydropower	2010	2010 November 15 to November 22	Technical Standards and Guidelines
Mr. Doan Trong Tuan	Electrical specialist / Vietnam institute of architecture, urban and rural planning, MOC (Ministry of Construction)	Hydropower	2010	2010 November 15 to November 22	Technical Standards and Guidelines
Mr. Tran Hong Tien	Electrical Expert / Department of Technic and Production, EVN (Viet Nam Electricity)	Hydropower	2010	2010 November 15 to November 22	Technical Standards and Guidelines
Mr. Nguyen Khac Tien Hai	Deputy Head / Measurement Department, ETC (Northern Electrical Testing Company)	Hydropower	2010	2010 November 15 to November 22	Technical Standards and Guidelines
Mr. Nguyen Van Long	Expert / Science and Technology Department, MOIT (Ministry of Industry and Trade)	Thermal Power	2010	2011 March 28 to March 31	Technical Standards and Guidelines
Mr. Nguyen Quoc Thuy	Senior Expert / Science and Technology Department, MOIT (Ministry of Industry and Trade)	Thermal Power	2010	2011 March 28 to March 31	Technical Standards and Guidelines
Ms. Vu Thi Hau	Assistant / Science and Technology Department, MOIT (Ministry of Industry and Trade)	Thermal Power	2010	2011 March 28 to March 31	Technical Standards and Guidelines
Mr. Vu Dinh Khiem	Deputy Director, ETC (Northern Electrical Testing Company)	Thermal Power	2010	2011 March 28 to March 31	Technical Standards and Guidelines
Mr. Trinh Van Yen	Manager / Thermotechnology Department, ETC (Northern Electrical Testing Company)	Thermal Power	2010	2011 March 28 to March 31	Technical Standards and Guidelines

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Mr. Phuong Hoang Kim	Deputy Director General / Science and Technology Department, MOIT (Ministry of Industry and Trade)	Network	2011	2011 March 31 to April 6	Technical Standards and Guidelines
Mr. Tran Huu Ha	Deputy Director General / Department of Science, Technology and Environment, MOC (Ministry of Construction)	Network	2011	2011 March 31 to April 6	Technical Standards and Guidelines
Mr. Dang Hai Dung	Deputy Chief / Technical Standards, Metrology, Quality and intellectual Property Division Science and Technology Department, MOIT (Ministry of Industry and Trade)	Network	2011	2011 March 31 to April 6	Technical Standards and Guidelines
Mr. Tran Manh Hung	Head / Energy Economic, Demand Forecast & Demand Side Management Department, Institute of Energy under MOIT	Network	2011	2011 March 31 to April 6	Technical Standards and Guidelines
Mr. Nguyen Tuan Anh	Manager / Energy Department, Institute for Industrial Policy and Strategy under MOIT	Network	2011	2011 March 31 to April 6	Technical Standards and Guidelines
Ms. Do Lan Binh	Senior Expert / Technical Production Department, EVN (Viet Nam Electricity)	Network	2011	2011 March 31 to April 6	Technical Standards and Guidelines
Mr. Tran Xuan Tuan	Manager / Electromechanic Department, ETC (Northern Electrical Testing Company)	Network	2011	2011 March 31 to April 6	Technical Standards and Guidelines

Appendix V. Equipment provided by Japanese Side

JFY 2009 (JPY) Hand Carried Equipment

Date	Item	Unit Amount	Unit	Cost
	NA			0.00
Total (JPY)				0.00

JFY 2010 (JPY) Hand Carried Equipment

Date	Item	Unit Amount	Unit	Cost
June 4, 2010	EPSON LCD Projector	117,000.00	1	117,000
Total (JPY)				117,000

JFY 2011 (JPY) Hand Carried Equipment

Date	Item	Unit Amount	Unit	Cost
November 30, 2011	EPSON LCD Projector	128,000.00	2	256,000
Total (JPY)				256,000

JFY 2009 (VND) Locally Purchased Equipment

Date	Item	Unit Amount	Unit	Cost
	NA			0.00
Total (VND)				0.00

JFY 2010 (VND) Locally Purchased Equipment

Date	Item	Unit Amount	Unit	Cost
July 20, 2010	Desktop PC	42,439,000.00	1	42,439,000
Total (VND)				42,439,000

JFY 2011 (VND) Locally Purchased Equipment

Date	Item	Unit Amount	Unit	Cost
	NA			0.00
Total (JPY)				0.00

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 A signature 'Mika' at the bottom right.
 A small mark or signature at the bottom left.

Appendix VI: Local cost borne by Japanese side

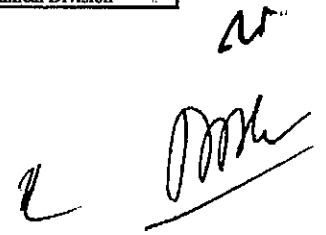
(Unit: JPY '000)

	1st Stage	2nd Stage	Total
General activity budget			
(1) General Activities	8,408	19,360	27,768
(2) Local Consultant Contracts	13,996	19,721	33,717
Total	22,404	39,081	61,485

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Appendix VII. LIST OF COUNTERPARTS

FULL NAME		ORGANIZATION	POSITION	
JCC Members				
1	1	Nguyen Dinh Hiep	Science and Technology Dept.- MOIT	Director
2	2	Phuong Hoang Kim	Science, Technology and Energy Efficiency Dept, General Energy Directorate- MOIT	Director
3	3	Dang Hai Dung	Science, Technology and Energy Efficiency Dept, General Energy Directorate- MOIT	Deputy Chief of Technical Standards, Metrology, Quality and Intellectual Property
4	4	Tran Huu Ha	Science, Technology & Environment Dept.- MOC	Deputy Director
5	5	Dang Hoang An	EVN	Deputy Director General of EVN
JMC Members				
6	1	Nguyen Dinh Hiep	Science and Technology Dept.- MOIT	Director
7	2	Phuong Hoang Kim	Science, Technology and Energy Efficiency Dept, General Energy Directorate- MOIT	Director
8	3	Dang Hai Dung	Science, Technology and Energy Efficiency Dept, General Energy Directorate- MOIT	Deputy Chief of Technical Standards, Metrology, Quality and Intellectual Property
9	4	Tran Huu Ha	Science, Technology & Environment Dept.- MOC	Deputy Director
10	5	Dang Hoang An	EVN	Deputy Director General of EVN
WG Members (Hydropower Group-1)				
11	6	Tran Viet Hoa	Science and Technology Dept.- MOIT	Manager of Energy Efficiency Division
12	7	Duong Khac Hien	Hydropower Department, General Energy Directorate- MOIT	Expert
13	8	Dinh Vu Thanh	Science, Technology & Environment Dept.- MARD	Deputy Director
14	9	Khong Trung Duan	Science, Technology & Environment Dept.- MARD	Expert
15	10	Nguyen Tuan Anh	Science, Technology & Environment Dept.- MARD	Expert
16	11	Le Huu Hoang	Technical-Operational Dept. -EVN	Expert
17	12	Tran Hong Tien	Technical-Operational Dept. -EVN	Expert
18	13	Le Kim Ngoc	Science, Technology & Environment Dept. -EVN	Expert
19	14	Nguyen Quang Trung	Northern Electrical Testing Company (ETCI)	Staff
20	15	Ngô Thanh	Northern Electrical Testing Company (ETCI)	Deputy Manager of High Voltage Division
21	16	Nguyen Van Dau	Northern Electrical Testing Company (ETCI)	Expert
WG Members (Hydropower Group-2)				
22	4	Tran Huu Ha	Science, Technology & Environment Dept.- MOC	Deputy Director
23	17	Hoang Quang Nhu	Science, Technology & Environment Dept.- MOC	Expert
24	18	Nguyen Cong Thinh	Science, Technology & Environment Dept.- MOC	Expert
25	19	Dinh Chinh Loi	Science, Technology & Environment Dept.- MOC	Expert
26	20	Doan Trong Tuan	Vietnam Institute of Architecture, Urban and Rural Planning - MO	Staff
27	6	Tran Viet Hoa	Science and Technology Dept.- MOIT	Manager of Energy Efficiency Division
28	7	Duong Khac Hien	Hydropower Department, General Energy Directorate- MOIT	Expert
29	8	Dinh Vu Thanh	Science, Technology & Environment Dept.- MARD	Deputy Director
30	9	Khong Trung Duan	Science, Technology & Environment Dept.- MARD	Expert
31	10	Nguyen Tuan Anh	Science, Technology & Environment Dept.- MARD	Expert
32	11	Le Huu Hoang	Technical-Operational Dept. -EVN	Expert
33	12	Tran Hong Tien	Technical-Operational Dept. -EVN	Expert
34	13	Le Kim Ngoc	Science, Technology & Environment Dept. -EVN	Expert
35	21	Le Quang Vinh	The Center for Water Research and Engineering Application (CRA)	Director
WG Members (Thermal Power Group)				
36	22	Nguyen Van Long	Science, Technology and Energy Efficiency Dept, General Energy Directorate- MOIT	Expert
37	12	Tran Hong Tien	Technical-Operational Dept. -EVN	Expert
38	23	Vu Ta Thong	Technical-Operational Dept. -EVN	Expert
39	24	Trinh Van Yen	Northern Electrical Testing Company (ETCI)	Manager of boiler calibration
40	25	Nguyen Xuan Trung	Northern Electrical Testing Company (ETCI)	Staff
41	26	Nguyen Tuan Anh	Northern Electrical Testing Company (ETCI)	Staff
WG Members (Network Group)				
42	3	Dang Hai Dung	Science, Technology and Energy Efficiency Dept, General Energy Directorate- MOIT	Deputy Manager
43	27	Nguyen Duy Hoa	Science and Technology Dept.- MOIT	Expert
44	28	Cu Huy Quang	Science and Technology Dept.- MOIT	Expert
45	29	Cao Van Dung	Safe Technique and Industry Environment Dept.-MOIT	Expert
46	30	Trinh Kim Hung	Expert hired by MOIT	Retired
47	31	Nguyen Sy Be	Expert hired by MOIT	Retired
48	32	Nguyen Quang Viet	Science, Technology & Environment Dept. -EVN	Deputy Director
49	33	Nguyen Xuan Khiem	Science, Technology & Environment Dept. -EVN	Expert
50	34	Nguyen Trung Kien	Science, Technology & Environment Dept. -EVN	Expert
51	35	Do Lan Binh	Technical-Operational Dept. -EVN	Expert
52	36	Tran Nam Trung	Technical-Operational Dept. -EVN	Expert
53	37	Ho Viet Thong	Hanoi Power Corporation (EVN Hanoi)	Deputy Director of Technical Dept.
54	38	Cao Chan	VINACONSULT	Chairman of Management Board
55	39	Tran Vinh Tinh	Da Nang Technology University	Head of Power system Faculty
56	40	Nguyen Tuan Anh	Strategy Institute	Expert of Energy Division
57	41	Vũ Đình Khiêm	Northern Electrical Testing Company (ETCI)	Deputy Director
58	42	Trần Xuân Tuấn	Northern Electrical Testing Company (ETCI)	Manager of Workshop
59	43	Tô Tuấn Anh	Northern Electrical Testing Company (ETCI)	Deputy Manager of Planning Division
60	44	Phan Thu Thủy	Northern Electrical Testing Company (ETCI)	Staff
61	45	Nguyễn Danh Dũng	Northern Electrical Testing Company (ETCI)	Deputy Manager of Relay Division
62	46	Mr. Hai	Northern Electrical Testing Company (ETCI)	Staff
63	47	Nguyen Hoang Linh	Northern Electrical Testing Company (ETCI)	Deputy Manager of Technical Division



Appendix VII. LIST OF COUNTERPARTS

FULL NAME		ORGANIZATION	POSITION	
JCC Members				
1	1	Nguyen Dinh Hiep	Science and Technology Dept.- MOIT	Director
2	2	Phan Cong Hop	Science, Technology - MOIT	Deputy Director
3	3	Nguyen Duy Hoa	Science, Technology Directorate- MOIT	Project Secretary
4	4	Tran Huu Ha	Science, Technology & Environment Dept.- MOC	Deputy Director
5	5	Dang Hoang An	EVN	Deputy Director General of EVN
JMC Members				
6	1	Nguyen Dinh Hiep	Science and Technology Dept.- MOIT	Director
7	2	Phan Cong Hop	Science and Technology Dept.- MOIT	Deputy Director
8	3	Nguyen Duy Hoa	Science and Technology Dept.- MOIT	Project Secretary
9	4	Tran Huu Ha	Science, Technology & Environment Dept.- MOC	Deputy Director
10	5	Dang Hoang An	EVN	Deputy Director General of EVN
WG Members (Hydropower Group-1)				
11	6	Tran Viet Hoa	Science and Technology Dept.- MOIT	Manager of Energy Efficiency Division
12	7	Duong Khac Hien	Hydropower Department, General Energy Directorate- MOIT	Expert
13	8	Dinh Vu Thanh	Science, Technology & Environment Dept.- MARD	Deputy Director
14	9	Khong Trung Duan	Science, Technology & Environment Dept.- MARD	Expert
15	10	Nguyen Tuan Anh	Science, Technology & Environment Dept.- MARD	Expert
16	11	Le Huu Hoang	Technical-Operational Dept. -EVN	Expert
17	12	Tran Hong Tien	Technical-Operational Dept. -EVN	Expert
18	13	Le Kim Ngoc	Science, Technology & Environment Dept. -EVN	Expert
19	14	Nguyen Quang Trung	Northern Electrical Testing Company (ETC1)	Staff
20	15	Ngo Thanh	Northern Electrical Testing Company (ETC1)	Deputy Manager of High Voltage Division
21	16	Nguyen Van Dau	Northern Electrical Testing Company (ETC1)	Expert
WG Members (Hydropower Group-2)				
22	4	Tran Huu Ha	Science, Technology & Environment Dept.- MOC	Deputy Director
23	17	Hoang Quang Nhu	Science, Technology & Environment Dept.- MOC	Expert
24	18	Nguyen Cong Thinh	Science, Technology & Environment Dept.- MOC	Expert
25	19	Dinh Chinh Loi	Science, Technology & Environment Dept.- MOC	Expert
26	20	Doan Trong Tuan	Vietnam Institute of Architecture, Urban and Rural Planning - MOC	Staff
27	6	Tran Viet Hoa	Science and Technology Dept.- MOIT	Manager of Energy Efficiency Division
28	7	Duong Khac Hien	Hydropower Department, General Energy Directorate- MOIT	Expert
29	8	Dinh Vu Thanh	Science, Technology & Environment Dept.- MARD	Deputy Director
30	9	Khong Trung Duan	Science, Technology & Environment Dept.- MARD	Expert
31	10	Nguyen Tuan Anh	Science, Technology & Environment Dept.- MARD	Expert
32	11	Le Huu Hoang	Technical-Operational Dept. -EVN	Expert
33	12	Tran Hong Tien	Technical-Operational Dept. -EVN	Expert
34	13	Le Kim Ngoc	Science, Technology & Environment Dept. -EVN	Expert
35	21	Le Quang Vinh	The Center for Water Research and Engineering Application (CRA)	Director
WG Members (Thermal Power Group)				
36	22	Nguyen Van Long	Science, Technology and Energy Efficiency Dept, General Energy Directorate- MOIT	Expert
37	12	Tran Hong Tien	Technical-Operational Dept. -EVN	Expert
38	23	Vu Ta Thong	Technical-Operational Dept. -EVN	Expert
39	24	Trinh Van Yen	Northern Electrical Testing Company (ETC1)	Manager of boiler calibration
40	25	Nguyen Xuan Truong	Northern Electrical Testing Company (ETC1)	Staff
41	26	Nguyen Tuan Anh	Northern Electrical Testing Company (ETC1)	Staff
WG Members (Network Group)				
42	3	Dang Hai Dung	Science, Technology and Energy Efficiency Dept, General Energy Directorate- MOIT	Expert, Coordinator
43	27	Nguyen Duy Hoa	Science and Technology Dept.- MOIT	Team Leader of WGs
44	28	Le Viet Cuong	Science and Technology Dept.- MOIT	Expert, Project Coordinator
45	29	Cao Van Dung	Safe Technique and Industry Environment Dept.-MOIT	Expert
46	30	Trinh Kim Hung	Expert hired by MOIT	Retired
47	31	Nguyen Sy Be	Expert hired by MOIT	Retired
48	32	Nguyen Quang Viet	Science, Technology & Environment Dept. -EVN	Deputy Director
49	33	Nguyen Xuan Khiem	Science, Technology & Environment Dept. -EVN	Expert
50	34	Nguyen Trung Kien	Science, Technology & Environment Dept. -EVN	Expert
51	35	Do Lan Binh	Technical-Operational Dept. -EVN	Expert
52	36	Tran Nam Trung	Technical-Operational Dept. -EVN	Expert
53	37	Ho Viet Thong	Hanoi Power Corporation (EVN Hanoi)	Deputy Director of Technical Dept.
54	38	Cao Chan	VINACONSULT	Chairman of Management Board
55	39	Tran Vinh Tinh	Da Nang Technology University	Head of Power system Faculty
56	40	Nguyen Tuan Anh	Strategy Institute	Expert of Energy Division
57	41	Vu Dinh Khiem	Northern Electrical Testing Company (ETC1)	Deputy Director
58	42	Tran Xuan Tuan	Northern Electrical Testing Company (ETC1)	Manager of Workshop
59	43	To Tuan Anh	Northern Electrical Testing Company (ETC1)	Deputy Manager of Planning Division
60	44	Phan Thu Thuy	Northern Electrical Testing Company (ETC1)	Staff
61	45	Nguyen Danh Duc	Northern Electrical Testing Company (ETC1)	Deputy Manager of Relay Division
62	46	Mr. Hai	Northern Electrical Testing Company (ETC1)	Staff
63	47	Nguyen Hoang Linh	Northern Electrical Testing Company (ETC1)	Deputy Manager of Technical Division

MINUTES OF MEETING
ON
THE FORTH JOINT COORDINATION COMMITTEE
IN
THE TECHNICAL COOPERATION PROJECT
ON
ELECTRIC POWER TECHNICAL STANDARDS PROMOTION IN VIETNAM

Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the 7th Mission of JICA Project Team for the Technical Cooperation Project on Electric Power Technical Standards Promotion in Vietnam (hereinafter referred to as "the JICA Evaluation Mission") and held the fourth meeting of the Coordination Committee (hereinafter referred to as "JCC") with Vietnamese authorities concerned including Ministry of Industry and Trade (hereinafter referred to as "MOIT"), Ministry of Construction (hereinafter referred to as "MOC") and Vietnam Electricity (hereinafter referred to as "EVN") as follows:

Date and Time : May 16, 2012 (13:40-17:45) and May 17, 2012 (14:00-17:00)

Place : Meeting room No 207 at MOIT

Participants: **MOIT:**

Science and Technology Dept.: Mr. Nguyen Duy Hoa, Mr. Le Viet Cuong,
General Department of Energy: Mr. Dang Hai Dung, Mr. Nguyen Van Long.

MOC:

Dept. of Science, Technology and Environment: Mr. Bui Van Duong,

EVN:

Science, Technology & Environment Dept.: Deputy Director Mr. Nguyen Quang Viet,

Electrical Testing Center (ETC):

Mr. Nguyen Quang Trung, Mr. Nguyen Tuan Anh

JICA Vietnam Office:

Representative: Mr. Murooka Naomichi

JICA Project Team:

Team Leader Mr. Nakamura Shigeru,

Hydropower Group: Mr. Okada Mototaro, Mr. Mizuhashi Yutaro, Mr. Umesaki Shuji,

Thermal Power Group: Mr. Ooyama Yoshio, Mr. Koga Masaaki, Mr. Egashira Takashi,

Network Group: Mr. Kuwahara Kenichi, Mr. Yamada Michihiro, Mr. Masuda Takayoshi,
Mr. Fujino Shigeo,

Local Coordinator Ms. Nguyen Huong Ha

The representatives of JICA, JICA Project Team and Vietnamese authorities concerned discussed and agreed as follows:

Contents:

1. Opening Remarks

On behalf of Vietnamese authorities concerned, Mr. Nguyen Duy Hoa gave an opening address emphasizing appreciation to the efforts of each party concerns in drafting and finalizing the Technical Regulations and expectation of further cooperation in drafting the Guidelines.

On behalf of the JICA, Mr. Murooka also gave an opening address expressing importance of efficient and cooperative implementation of the Project by both the Vietnamese side and the Japanese side.

2. Discussion and Conclusion

2.1 Current Status and Activity Plan of the Project

2.1.1 Technical Regulations

JICA Team reported the current status of the draft Technical Regulations as follows:

- JICA Team reviewed the final draft of Technical Regulation and submitted the comment tables to MOIT by the end of March 2012.
- MOIT submitted the consolidated comment tables on Technical Regulations to JICA Team in the beginning of April 2012.
- Comments are being discussed in WG Meetings and concluded in the 7th Mission of JICA Team.

MOIT insisted that there are still inconsistencies related to the structure in the current draft Technical Regulation mainly in Vol.1 and these inconsistencies should be corrected in the final version of Technical Regulations. MOIT also insisted that when two or more articles in old technical regulations are combined for restructuring, incompatibility in the contents should be avoided.

JICA Project Team replied that the Final Draft had been prepared based on the concept and policy for drafting the Technical Regulation which had been agreed in the First Phase of the Project. JICA Project Team also insisted that MOIT should be responsible for overall revision on Vietnamese version of the draft Technical Regulation.

MOIT expressed that the concept and policy for drafting the Technical Regulation is completely agreed. MOIT wants JICA to focus on correcting technical incompatibility in the Technical Regulation.

In conclusion, the following are agreed for finalizing the draft Technical Regulations:

- (1) JICA Team will prepare the conclusion tables which classify the demarcation of responsibility among MOIT, JICA Team and ETC (for translation issues only for ETC) based on the results of discussions in WG Meetings and with agreement by MOIT. The tables will be submitted by the end of May 2012.
- (2) JICA Team will update the English version of Technical Regulation based on the conclusion in WG Meetings and fix the inconsistencies in the Technical Regulation. The updated English version will be submitted to MOIT within one month (by end of June 2012) and also translated Vietnamese version within two months (by the end of July 2012).
- (3) MOIT will review and refine the Vietnamese version of Technical Regulation by the beginning of September 2012.

MOIT expressed its intention that MOIT will submit the draft Technical Regulation to MOST for its review in the September 2012.

MOC expressed the current status of the Project stating that there were no serious problems in the draft Technical Regulation for hydropower civil works under the MOC scope.

2.1.2 Guidelines

JICA Project Team insisted that there were local technical issues related to low voltage particularly applied in Vietnam which are difficult for JICA Project Team to understand for preparing a complete draft especially for network portion. In this regard, JICA Project Team stated that it would take time to prepare a draft of low voltage network portion satisfactory from Vietnamese point of view without initiative of MOIT in finalization of the Guidelines. MOIT stated that in this case, the Guideline should be prepared mainly based on the Vietnam's old technical regulation documents by both MOIT and JICA Project Team.

JICA Project Team explained the current status and schedule of development of draft Guideline and the overall schedule for Guideline was agreed as shown in the table attached hereto (Attachment-1).

In the above regard, it was agreed to hold the Workshop one time in October 2012 during the 9th Mission of JICA Project Team and to cancel the Workshops in August 2012 and January 2013 in order to provide sufficient time for participants for reviewing the draft Guideline and providing with comments before the Workshop for efficient and effective discussion. In this regard, it was agreed that JICA Project Team would submit the draft Guidelines two months before the Workshop as requested by MOIT and EVN.

In addition, it was agreed to adjust the schedule of the 10th Mission and the following missions after

receiving the comments on draft Guideline in the Workshop in October 2012 to set an appropriate mission schedule for efficient discussion for preparation of final draft of Guidelines.

Concerning the 1st draft of Guideline submitted to MOIT in March and April 2012, MOIT informed that it will provide JICA Team with the comments by the middle of June 2012.

3. Work Plan of 2nd Stage (Extension of Project Term)

Based on the discussion concerning the current status and activity plan for finalizing the draft Technical Regulation and development of draft Guidelines stated above, the Work Plan of the 2nd Stage was agreed as shown in the Work Flow attached hereto (Attachment-2).

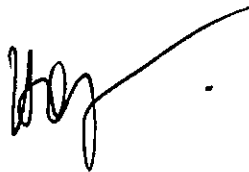
As the result, it was agreed among the parties concern to extend the Project term by 3 months from “March 2010 to March 2013” to “March 2010 to June 2013” as recommended in the Mid-term Evaluation Mission of JICA subject to official agreement between JICA and Vietnamese counterpart (MOIT and MOC) to be made by updating Record of Discussion.

4. Revision of PDM and PO

JICA Project Team explained the purpose of the Revision of PDM based on the recommendation of the Mid-term Evaluation Mission of JICA as follows:

- To change the overall goal to more concrete target.
- To change the project purpose to the target achievable within the Project period.

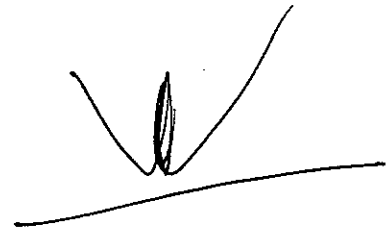
Each party agreed to revise the PDM and PO as attached hereto (Attachment-3 and Attachment-4) as recommended in the Mid-term Evaluation Mission of JICA.



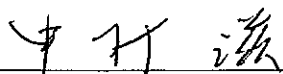
MOIT
*Deputy Director General
Science & Technology Dept.
Mr. Phan Cong Hop*



MOC
*Deputy Director General
Dept. of Science, Technology
& Environmental
Dr. Tran Huu Ha*



EVN
*Deputy Director
Science, Technology
& Environmental Dept.
Mr. Nguyen Quang Viet*



JICA Project Team
*Leader
Mr. Nakamura Shigeru*

Attachment-1 Submission Schedule of Draft Guideline (Vietnamese Version)

Year		2012										2013						
Month		3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	
Mission Schedule	Hydro Group			7th		8th			9th		10th				11th		12th	
	Thermal Group			7th			8th		9th		10th				11th		12th	
	Network Group			7th			8th		9th		10th				11th		12th	
WS Schedule (tentative)									Oct.26, 30									
Date of Submission		Mar.30	Apr.18	(May.31)	(Jun.29)	(Jul.16)	Aug.26	Sep.26						Mar.15			Jun.28 (toJICA)	
Hydropower	Vol.4 Operation	1st Draft					2nd Draft							Final Draft for Approval			Final Draft	
	Vol.5 Inspection	1st Draft					2nd Draft							Final Draft for Approval			Final Draft	
	Vol.HP Civil Work (MOC)		Outline				1st Draft							Final Draft for Approval			Final Draft	
Thermal	Vol.2 Design	Mech	1st Draft	1st Draft			2nd Draft							Final Draft for Approval			Final Draft	
		Elec		1st Draft			2nd Draft							Final Draft for Approval			Final Draft	
	Vol.4 Operation	Mech				1st Draft								Final Draft for Approval			Final Draft	
		Elec				1st Draft								Final Draft for Approval			Final Draft	
	Vol.5 Inspection	Mech		1st Draft				2nd Draft							Final Draft for Approval			Final Draft
		Elec				1st Draft									Final Draft for Approval			Final Draft
Network	Vol.1 Design					1st Draft (1/2)		1st Draft (2/2)						Final Draft for Approval			Final Draft	
	Vol.3 Construction	1st Draft				2nd Draft								Final Draft for Approval			Final Draft	
	Vol.4 Operation	1st Draft				2nd Draft								Final Draft for Approval			Final Draft	
	Vol.5 Inspection			1st Draft		2nd Draft								Final Draft for Approval			Final Draft	

Month Number	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41						
Stage	Second Stage																													
Year	2011												2012										2013							
Calendar Month	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7						
Activity	Guideline Development																													
Homework in Japan	5th Homework			6th Homework				7th Homework			8th Homework			9th Homework			10th Homework			11th Homework		12th Homework								
	<ul style="list-style-type: none"> - Preparation of Preliminary Draft Guidelines - Preparation of Final Draft Technical Regulations for Hydropower Civil Works (MOC) - Preparation of Old-New Tables 			<ul style="list-style-type: none"> - Review of Final Draft Technical Regulation - Review of existing documents - Preparation of 1st Draft Guidelines 				<ul style="list-style-type: none"> - Review of existing documents - Review of comments on 1st draft Guideline - Preparation of 1st and 2nd Draft Guidelines 			<ul style="list-style-type: none"> - Preparation for Workshop 			<ul style="list-style-type: none"> - Review of comments in Workshop - Preparation of Final Draft Guidelines 			<ul style="list-style-type: none"> - Preparation of Final Draft Guidelines - Preparation of Draft Project Completion Report 			<ul style="list-style-type: none"> - Finalization of Final Draft Guideline - Finalization of Project Completion Report 		<ul style="list-style-type: none"> - Compiling of Project Completion Report - Submission of Final Project Output 								
JICA Project Team	6th Field Work (2 weeks)					8th Field Work (Hydro G) (2 weeks)					8th Field Work (Thermal & Network G) (2 weeks)					10th Field Work (2 weeks)					12th Field Work (1 week)									
	<ul style="list-style-type: none"> - 5th JMC Meeting (discussion on 2nd Stage Work Plan) - 2nd JCC Meeting (discussion on promulgation of Technical Regulations) - WG Meetings (discussion on Preliminary Draft Guidelines) - Collection of supplemental documents and information 					<ul style="list-style-type: none"> (Hydropower Group) - WG Meeting (discussion on 1st Draft Guidelines) - Collection of supplemental documents and information - Investigation on existing power plants and network facilities, if required 					<ul style="list-style-type: none"> (Thermal Power Group & Network Group) - WG Meeting (discussion on 2nd Draft Guidelines) - Collection of supplemental documents and information - Investigation on existing power plants and network facilities, if required 					<ul style="list-style-type: none"> - WG Meetings (discussion on comments on 2nd Draft Guidelines) 					<ul style="list-style-type: none"> - 7th JMC Meeting (Conclusion of Final Draft Guidelines) (Rreport of Project Completion Report) - 5th JCC Meeting (confirmation of 									
Field Work in Vietnam													7th Field Work (2 weeks)				9th Field Work (2.5 weeks)				11th Field Work (1.5 week)									
													<ul style="list-style-type: none"> - WG Meetings (discussion on Final Draft Technical Regulation) - Collection of supplemental documents and information - Investigation on existing power plants - WG Meetings (discussion on 1st draft Guidelines) - 4th JCC Meeting (Updating PDM and Workflow) 				<ul style="list-style-type: none"> - WG Meetings (discussion on comments on the 2nd Draft Guidelines) - Collection of supplemental documents and information - Holding 3rd Workshop (discussion on 2nd Draft Guidelines) - Holding 6th JMC Meeting (review of work progress) 				<ul style="list-style-type: none"> - WG Meetings (confirmation of Final Draft Guidelines) 									
Vietnamese Counterpart	<ul style="list-style-type: none"> - Review on Final Draft of Technical Regulations for finalization for promulgation - Procedure for promulgation of Technical Regulations (JCC) - Collection and review of existing reference documents (Local Consultant) - Translation of collected documents (Local Consultant) - Supporting JICA Team for preparation of 1st Draft Guidelines 												<ul style="list-style-type: none"> - Review on 2nd Draft Guidelines and compiling the review results (WG) - Collection and review of existing reference documents (Local Consultant) - Translation of collected documents (Local Consultant) - Supporting JICA Team for preparation of Preliminary Final Draft Guideline (MOIT, MOC, Local Consultant) - 2nd Baseline Survey and Needs Survey (Local Consultant) 												<ul style="list-style-type: none"> - Final reporting (Local Consultant) - Finalization of Guideline for promulgation (Vietnamese version) - Promulgation and promotion of Guidelines 					
	<ul style="list-style-type: none"> - Review on 1st Draft Guidelines and compiling the review results - Collection and review of existing reference documents (Local Consultant) - Translation of collected documents (Local Consultant) - Supporting JICA Team for preparation of 2nd Draft Guidelines - 2nd Baseline Survey and Needs Survey (Local Consultant) 												<ul style="list-style-type: none"> - Review on Preliminary Final Draft Guidelines and compiling the review results (WG) - Supporting JICA Team for preparation of Final Draft Guidelines (MOIT, MOC, Local Consultant) - Reporting of 2nd Baseline Survey and Needs Survey (Local Consultant) 																	
Joint Coordination Committee (JCC)					▽			▽																	▽					
Joint Management Committee (JMC)					▽																				▽					
Working Group (WG) Meeting				▽																					▽					
Vietnamese Counterpart Activities	-----																													
Workshop																														
Counterpart Training																														
Reports													▽ 1st Draft Guideline						▽ 2nd Draft Guideline						Final Draft Guideline (for Approval) ▽			Final Draft Guideline ▽		
													▽ Midterm Project Evaluation Mission (JICA)						▽ Project Progress Report No.2						Final Project Evaluation Mission (JICA) (Tentative) ▽			2nd Stage Completion Report ▽		
																									Project Completion Report ▽					

Attachment-2: Updated Project Work Flow (2nd Stage)

Attachment-3: Project Design Matrix (PDM) Version 2

Project Title: Electric Power Technical Standards Promotion Project in Vietnam

Executing Agencies: Ministry of Industry and Trade (MOIT), Ministry of Construction (MOC), Vietnam Electricity (EVN), (and other organizations concerned)

Target Area: Vietnam

Target Group: Electric power industries in Vietnam

Project Period: Three Years from March, 2010 to June 2013

Version Number: PDM Ver. 2

Date: May 16, 2012

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Overall Goal: The Electric Power Technical Standards and Guidelines shall be enforced to ensure improvement of reliability and safety of power supply in Vietnam.</p>	<p>(Details will be specified in the terminal evaluation.)</p> <ol style="list-style-type: none"> 1. The Electric Power Technical Standards and Guidelines under MOIT are promulgated by the end of 2014. 2. The Technical Guidelines concerning civil works of hydropower plants under MOC is promulgated by the end of 2014. 3. Designs of newly constructed electric power facilities are permitted according to the Electric Power Technical Standards and Guidelines. 4. Completion inspections of newly constructed electric power facilities are conducted according to the Electric Power Technical Standards and Guidelines. 5. Regular inspections on operation and maintenance of electric power facilities are conducted and reported by operators to MOIT according to the Electric Power Technical Standards and Guidelines. 	<p>(Details will be specified in the terminal evaluation.)</p> <ol style="list-style-type: none"> 1. Documents of MOIT 2. Documents of MOC 	
<p>Project Purpose: The Electric Power Technical Standards and Guideline are authorized by the Vietnamese authorities.</p>	<ol style="list-style-type: none"> 1. The final draft of the Electric Power Technical Standards in the scope of MOIT is approved by JMC by June 2013. 2. The final draft of the Electric Power Technical Guidelines in the scope of MOIT is approved by JMC by June 2013. 3. The Technical Standards concerning civil works of hydropower plants in the scope of MOC is promulgated by the end of 2012. 4. The final draft of Technical Guidelines concerning civil works of hydropower plants in the scope of MOC is approved by JMC by June 2013. 	<ol style="list-style-type: none"> 1. Minutes of Meeting on JMC 2. Minutes of Meeting on JMC 3. Official documents of MOC 4. Minutes of Meeting on JMC 	<ul style="list-style-type: none"> • Government policy concerning the Electric Power Technical Regulations will be remained.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<p>Outputs:</p> <ol style="list-style-type: none"> 1. Report of review on existing Technical Standards is developed. 2. Drafts of the Technical Standards are developed. 3. Drafts of the Guidelines for Technical Standards are developed. 	<ol style="list-style-type: none"> 1. The report is approved by JMCs by July, 2010. 2.1 The final drafts of the Electric Power Technical Standards in English are submitted to JMC by August, 2011. 2.2 The final draft of the Technical Standards of the MOIT scope in Vietnamese is refined by the MOIT expert team by May, 2013. 2.3 The final draft of the Technical Standards of the MOC scope in Vietnamese is refined by the MOC expert team by June, 2012. 3.1 The final drafts of the Electric Power Technical Guidelines are submitted to JMC by May, 2013. 3.2 The final draft of the Technical Guidelines of the MOIT scope is refined by the MOIT expert team by the end of May, 2013. 3.3 The final draft of the Technical Guidelines of the MOC scope is refined by the MOC expert team by the end of May, 2013. 	<ol style="list-style-type: none"> 1. Minutes of meeting on JMC 2.1 Project record 2.2 Project record 3.1 Project record 3.2 Project record 	
<p>Activities:</p> <ol style="list-style-type: none"> 1.1 Collect existing Technical Standards, related documents and information 1.2 Review existing Technical Standards and related documents 1.3 Develop the report of review on inconsistency of existing Technical Standards and the resultant problems, and the necessities for improvement 2.1 Develop new Technical Standards by Working Groups (“WGs”) <ul style="list-style-type: none"> • <u>WG: Hydro 2</u> (Under MOC): Design, Construction, Completion Inspection for hydropower civil works • <u>WG: Thermal</u> (Under MOIT): Design for Large-scaled Coal-fired Plant & Gas-combined Cycle 2.2 Make revision and addition into the existing Technical Standards by WGs <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Thermal</u> (Under MOIT): Vol. 5 & 6 • <u>WG: Network</u> (Under MOIT): Vol. 1-7 (including Grounding & Lightening Protection) 2.3 Review the final drafts of Technical Standards in English and Vietnamese comprehensively 3.1 Prepare framework of Guidelines based on revised and developed Technical Standards by WGs 3.2 Develop Guidelines by WGs <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) • <u>WG: Hydro 2</u> (Under MOC) 	<p style="text-align: center;"><u>Inputs: Vietnamese Side</u></p> <p><Personnel Inputs ></p> <ul style="list-style-type: none"> • Joint Management Committee • Technical Working Groups <ul style="list-style-type: none"> • <u>WG: Hydro 1</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) MOC Expert X 1 person 3) EVN Science, Technology & Environment X 1 person 4) EVN Productive Technical Engineer X 1 person • <u>WG: Hydro 2</u> (Under MOC) <ol style="list-style-type: none"> 1) MOC Expert X 1-2 persons 2) MOIT Expert X 1 person 3) EVN Science, Technology & Environment X 1 person 4) EVN Design Engineer X 1 person 5) MARD (HQ) X 1 person • <u>WG: Thermal</u> (Under MOIT) <ol style="list-style-type: none"> 1) MOIT Expert X 1-2 persons 2) EVN Productive Technical Engineer X 1-2 persons 3) Power Plant Productive Technical Engineer (in principle from Plant) X 1 person 	<p style="text-align: center;"><u>Inputs: Japanese Side</u></p> <p><Dispatch of Experts></p> <p><Long-term Expert></p> <ul style="list-style-type: none"> • Chief Advisor <p><Short-term Expert></p> <ul style="list-style-type: none"> • Hydro (civil engineering, electrical) • Thermal (mechanical, electrical) • Network (transmission, substation, distribution) <p><Technical Training in Japan></p> <p><Workshops></p> <p><Cost></p> <ul style="list-style-type: none"> • Necessary cost for hiring consultants supporting JICA experts <p><Machinery and Equipment></p> <ul style="list-style-type: none"> • Other machinery such as vehicles and equipment to be agreed mutually upon as necessary for the implementation of the Project 	<p style="text-align: center;"><u>Pre-conditions:</u></p> <ul style="list-style-type: none"> • Project Purpose and necessary commitment for the Inputs are understood and secured.

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumptions
<ul style="list-style-type: none"> • <u>WG: Thermal</u> (Under MOIT) • <u>WG: Network</u> (Under MOIT) <p>3.3 Review the drafts of Technical Guidelines in English and Vietnamese comprehensively</p>	<ul style="list-style-type: none"> • <u>WG: Network</u> (Under MOIT): <ol style="list-style-type: none"> 1) MOIT Expert X 3 persons 2) EVN Science, Technology & Environment X 1 person 3) EVN Productive Technical Engineer X 1 person • Expert team (MOIT) • Expert team (MOC) <p><Building & Facilities></p> <ul style="list-style-type: none"> • Project Office Space for Japanese Experts <p><Administration Cost ></p> <ul style="list-style-type: none"> • Necessary cost for activities of WG Members (from MOIT & MOC respectively) 		

Abbreviation: WG: Working Groups, JMC: Joint Management Committee

Attachment-4: Plans of Operation (PO) for Electric Power Technical Standards Promotion in Vietnam

Calendar Year Project Year	2010				2011				2012				2013	Person in Charge in the Project	Input	Remarks	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4					Q1
Duration of the Project	1	4	7	10	13	16	19	22	25	28	31	34	37	40			
Output 1: Report of review on inconsistency of existing technical standards and its problems caused, and the necessities for improvement will be developed.																	
Activities for Output-1																	
Hydro 1 (under MOIT)																	
1	Collect existing mandatory technical standards, related documents and information	■													C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
1	Review existing mandatory technical standards and related documents	■													C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
1	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement		■												C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
Hydro 2 (under MOC)																	
1	Collect existing mandatory technical standards, related documents and information	■													C/P in MOC, MOIT, MARD,	Long-term Expert, Sort-term Expert	
1	Review existing mandatory technical standards and related documents	■													C/P in MOC, MOIT, MARD,	Long-term Expert, Sort-term Expert	
1	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement		■												C/P in MOC, MOIT, MARD, EVN	Long-term Expert, Sort-term Expert	
Thermal (under MOIT)																	
1	Collect existing mandatory technical standards, related documents and information	■													C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
1	Review existing mandatory technical standards and related documents	■													C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
1	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement		■												C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
Network (under MOIT)																	
1	Collect existing mandatory technical standards, related documents and information	■													C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
1	Review existing mandatory technical standards and related documents	■													C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
1	Development of review report on inconsistency of existing technical standards and the resultant problems, and the necessities for improvement		■												C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
Output 2: Mandatory technical standards will be revised and developed.																	
Activities for Output-2																	
Hydro 1 (under MOIT)																	
2	Develop new technical standards by Working	<i>(No new technical standards for Hydro 1)</i>															
2	Revise the existing technical standards by Working Groups	■	■	■	■	■	■	■	■	■	■	■	■	■	C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
2	Review the final drafts of Technical Standards														C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
Hydro 2 (under MOC)																	
2	Develop new technical standards by Working Groups	■	■	■	■	■	■	■	■	■	■	■	■	■	C/P in MOC, MOIT, MARD,	Long-term Expert, Sort-term Expert	
2	Make revision and addition into the existing technical standards by Working Groups	<i>(No existing technical standards for Hydro 2)</i>															
Thermal (under MOIT)																	
2	Develop new technical standards by Working Groups	■	■	■	■	■	■	■	■	■	■	■	■	■	C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
2	Make revision and addition into the existing technical standards by Working Groups	■	■	■	■	■	■	■	■	■	■	■	■	■	C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
2	Review the final drafts of Technical Standards														C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
Network (under MOIT)																	
2	Develop new technical standards by Working	<i>(No new technical standards for Network)</i>															
2	Make revision and addition into the existing technical standards by Working Groups	■	■	■	■	■	■	■	■	■	■	■	■	■	C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
2	Review the final drafts of Technical Standards														C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
Output 3: Guidelines for technical standards will be developed.																	
Activities for Output-3																	
Hydro 1 (under MOIT)																	
3	Prepare framework of guidelines based on revised and developed technical standards by														C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
3	Develop guidelines by Working Groups														C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
3	Review the drafts of Technical Guidelines														C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
Hydro 2 (under MOC)																	
3	Prepare framework of guidelines based on revised and developed technical standards by														C/P in MOC, MOIT, MARD,	Long-term Expert, Sort-term Expert	
3	Develop guidelines by Working Groups														C/P in MOC, MOIT, MARD,	Long-term Expert, Sort-term Expert	
3	Review the drafts of Technical Guidelines														C/P in MOC, MOIT, MARD,	Long-term Expert, Sort-term Expert	
Thermal (under MOIT)																	
3	Prepare framework of guidelines based on revised and developed technical standards by														C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
3	Develop guidelines by Working Groups														C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
3	Review the drafts of Technical Guidelines														C/P in MOIT, EVN, MOC	Long-term Expert, Sort-term Expert	
Network (under MOIT)																	
3	Prepare framework of guidelines based on revised and developed technical standards by														C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
3	Develop guidelines by Working Groups														C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	
3	Review the drafts of Technical Guidelines														C/P in MOIT, EVN	Long-term Expert, Sort-term Expert	

MINUTES OF MEETING
ON
THE SIXTH JOINT MANAGEMENT COMMITTEE
IN
THE TECHNICAL COOPERATION PROJECT
ON
ELECTRIC POWER TECHNICAL STANDARDS PROMOTION IN VIETNAM

Japan International Cooperation Agency (hereinafter referred to as “JICA”) dispatched the 9th Mission of JICA Project Team for the Technical Cooperation Project on Electric Power Technical Standards Promotion in Vietnam (hereinafter referred to as “the JICA Evaluation Mission”) and held the sixth meeting of the Joint Management Committee (hereinafter referred to as “JMC”) with Vietnamese authorities concerned including Ministry of Industry and Trade (hereinafter referred to as “MOIT”), Ministry of Construction (hereinafter referred to as “MOC”) and Vietnam Electricity (hereinafter referred to as “EVN”) as follows:

Date and Time : November 01, 2012 (08:30 – 12:00)

Place : Meeting room No 207 at MOIT

Participants: **MOIT:**

Science and Technology Dept.: Mr. Nguyen Duy Hoa, Ms. Phan Cam Tu

General Department of Energy: Mr. Nguyen Van Long.

MOC:

Dept. of Science, Technology and Environment: Mr. Bui Van Duong,

EVN:

Science, Technology & Environment Dept.: Deputy Director Mr. Nguyen Quang Viet,

Electrical Testing Center (ETC):

Mr. To Tuan Anh, Mr. Nguyen Danh Duc, Mr. Nguyen Tuan Anh,

Mr. Nguyen Quang Trung,

JICA Project Team:

Team Leader Mr. Nakamura Shigeru,

Hydropower Group: Mr. Okada Mototaro, Mr. Mizuhashi Yutaro, Mr. Umesaki Shuji,

Thermal Power Group: Mr. Koga Masaaki, Mr. Higo Masashi, Mr. Imamura Hiroshi,

Network Group: Mr. Kuwahara Kenichi, Mr. Aki Toshio, Mr. Masuda Takayoshi,

Local Coordinator Ms. Pham Hong Hai

The JICA Project Team and Vietnamese authorities concerned discussed and agreed as follows:

Contents:

1. Opening Remarks

On behalf of Vietnamese authorities concerned, Mr. Nguyen Duy Hoa gave an opening address emphasizing appreciation to the efforts of each party concerns in drafting and finalizing the Technical Regulations and Guidelines and expectation of further cooperation in finalizing Project outputs.

The Vietnamese side requested JICA team to cooperate in improving the quality of the draft Guidelines of all 03 groups (Hydro, Network and Thermal) toward finalization of them.

2. Discussion and Conclusion

2.1 Results of the 3rd Workshop

2.1.1 Hydropower Session

As the representative of MOIT who joined the hydropower session of Workshop is absent from this JMC

meeting, MOIT agreed to report the result of Workshop at a later date in writing.

Response to the comments received from participants of Workshop will be made in the form of Comment Table and confirmed in the 10th Mission of JICA Project Team.

2.1.2 Network Session

Mr. Hoa of MOIT and Mr. Viet of EVN reported the result of Workshop of Network Session as follows:

- Seven (7) technical issues on the final draft of Technical Regulation were mainly discussed in the Workshop. However, still there is a gap in the opinions among the parties concern, and there are some discrepancies between the contents of the existing relevant regulations such as Decree, Circular and etc. and the draft of revised technical regulation.
- Also, some problems were pointed out in the draft Guideline, for example;
 - Calculation method of grounding resistance (need to explain carefully the application of the proposed international standard in Vietnam).
 - Inappropriate use of technical terms both in English and Vietnamese.

The Vietnamese side will unify existing practices and legal documents in the Technical regulations. JICA Team shall support the revision of Technical regulations and revise Guidelines accordingly.

2.1.3 Thermal Power Session

Mr. Viet of EVN reported the result of Workshop of Thermal Power Session as follows:

- There are some provisions in which comments of Vietnamese side have not been reflected.
- The contents of draft Guideline are not practical in the Vietnamese circumstances.
- There are inconsistencies with the other fields (network and hydropower) in use of technical terms.

In the above regard, JICA Team requests Vietnamese counterpart to understand the status and position of Guideline as JICA Team has explained so far. The Vietnamese side shall provide detailed comments by the agreed deadline and JICA Team will evaluate them and make revision based on agreed conclusions.

2.2 Overall Workflow

JICA Team explained the overall workflow from November 2012 to June 2013 according to the chart attached hereto.

The Vietnamese side proposed to arrange the 10th Mission of JICA Team in February 2013 after Tet Holiday instead of January 2013 as the Vietnamese side would be busy in January and to avoid concentration of the mission of each field (hydropower, thermal power and network).

However, JICA Team requested Vietnamese side to accept the 10th Mission in January 2013 in order to complete the Project on time in June 2013.

In conclusion, both sides agreed to arrange the 10th Mission in January 2013 at least for Network Group and Thermal Power Group provided that Hydropower Group would be dispatched in December 2012 if possible. In this regard, JICA Team will propose the schedule of 10th Mission for final agreement in due course.

2.3 Procedure and Schedule for Finalizing Draft Guidelines (MOIT Scope)

Both of Vietnamese side and Japanese side agreed to the following procedure for finalizing the draft Guideline under MOIT's scope as follows:

- 1) Comments of Workshop participants will be received by the end of November 2012.
- 2) MOIT will consolidate the comments in the agreed form of comment table and deliver them to JICA Team by December 05, 2012.
- 3) JICA Project Team will prepare proposal of solutions in the form of comment table and deliver to Vietnamese side by the beginning of January 2013. (Thermal Team will submit the English version of Pre-final Draft in CD-ROM by the beginning of Jan. 2013.).
- 4) Final solutions shall be concluded in the 10th Mission of JICA Team in the 2nd half of January 2013.
- 5) "Final draft Guideline for Approval" shall be submitted by the middle of March 2013 for final review.

- 6) "Final draft Guideline for Approval" shall be approved in the 7th JMC Meeting to be held in April 2013 during 11th Mission of JICA Team.
- 7) Final Draft Guideline will be submitted to JICA Tokyo Office by June 26, 2013.

2.4 Procedure and Schedule for Finalizing Technical Regulations (MOIT Scope)

Both of Vietnamese side and Japanese side agreed to the following procedure for finalizing the draft Technical Regulations under MOIT's scope as follows:

- 1) Comments of WS participants will be received by the end of November 2012.
- 2) MOIT shall consolidate the comments and shall propose solutions for finalizing the Technical Regulation by MOIT.
- 3) JICA Project Team will provide Vietnamese side with technical support, if necessary, upon the request of Vietnamese side.
- 4) Progress of the finalization shall be informed to JICA Team during the 10th Mission in January 2013.

2.5 Procedure and schedule of promulgation of Technical Regulations and Guidelines (MOIT Scope)

MOIT reported the current situation regarding the schedule of promulgation of Technical Regulations and Guidelines as follows:

- Technical Regulations will be promulgated under the responsibility and control of MOIT. However, the schedule of promulgation is not clear for the present.
- However, promulgation of Guideline is unexampled in Vietnam and MOIT considers that it is out of scope of MOST as the status of Guideline is different from that of TCVN. Therefore, the matter is still unclear and under consideration for the present.

JICA Project Team recommended MOIT not to take the idea that Guideline would be promulgated as the appendix of mandatory Technical Regulations. If the Guidelines were issued together with the Technical Regulations as their appendix, the contents of Guidelines become mandatory requirements. In this regard, JICA Team recommended MOIT to publish the Guidelines in an applicable manner as the voluntary documents.

2.6 Procedure and schedule of promulgation of Technical Regulation (MOC Scope)

Both of Vietnamese side and Japanese side agreed to the following procedure for finalizing the draft Technical Regulation under MOC's scope as follows:

- 1) Comments of Workshop participants will be received by the end of November 2012.
- 2) JICA Project Team will provide MOC with technical support together with Local Sub-consultant in preparing the proposed solutions.
- 3) MOC will hold an internal Workshop by the end of December 2012 inviting Vietnamese experts including the experts from MOIT in order to discuss and conclude the solutions.
- 4) Final solutions shall be concluded in the 10th Mission of JICA Team in the middle of January 2013.
- 5) "Final draft Technical Regulation for Approval" shall be prepared and submitted to MOC by the middle of March 2013 for checking and approval in the 7th JMC Meeting to be held in April 2013 during 11th Mission of JICA Team.
- 6) Final draft Technical Regulation will be submitted to JICA Tokyo Office by June 26, 2013.

2.7 Procedure and Schedule for Finalizing Draft Guideline (MOC Scope)

Both of Vietnamese side and Japanese side agreed to the following procedure for finalizing the draft Guideline under MOC's scope as follows:

- 1) Tentative 1st draft Guideline will be prepared based on the current draft of Technical Regulation and submitted to MOC by JICA Team by December 25, 2012.
- 2) MOC will hold an internal Workshop in the middle of January 2013 during the 10th Mission of JICA Team to collect the comments on tentative draft Guideline.
- 3) Preliminary Final draft Guideline will be prepared based on the comments received in the MOC's

Workshop in January 2013 and submitted to MOC by the beginning of March 2013.

- 4) MOC will hold an internal Workshop in order to discuss the contents of Preliminary Final draft Guideline and to conclude the final solutions by the beginning of April 2013 before the 11th Mission of JICA Team in April 2013.
- 5) Final draft Guideline shall be approved in the 7th JMC Meeting to be held in April 2013 during 11th Mission of JICA Team.
- 6) Final Draft Guideline will be submitted to JICA Tokyo Office by June 26, 2013.

2.8 Procedure and schedule of promulgation of Technical Regulations and Guidelines (MOC Scope)

MOC reported the current situation regarding the schedule of promulgation of Technical Regulation and Guideline as follows:

- Technical Regulation will be promulgated under the responsibility and control of MOC. However, the schedule of promulgation is not clear for the present.
- As the promulgation of Guideline is unexampled in Vietnam and as the status of Guideline is different from that of TCVN, MOC has an idea to promulgate the Guideline by only publishing it as a handbook for Technical Regulation.

2.9 Baseline Surveys

The followings are agreed regarding the Baseline Surveys to be conducted by ETC:

- 1) Baseline Survey on accidents and power outages
The baseline survey in accidents and power outages will be conducted for the years 2009, 2010 and 2011 in the same manner as conducted in the 1st Stage.
ETC and JICA Team will draft the questionnaire and send it to MOIT for agreement.
MOIT and EVN will cooperate with ETC in the execution of the survey.
- 2) Baseline Survey on degree of satisfaction to the technical regulations
The baseline survey on degree of satisfaction to the existing technical regulations will be conducted by sending questionnaire to selected major power companies and power stations in Vietnam.
ETC and JICA Team will draft the questionnaire and send to MOIT for agreement.
MOIT and EVN will cooperate with ETC in the execution of the survey.
- 3) Needs Survey on actual needs of technical regulations and guidelines
The needs survey on actual needs of technical regulations and guidelines will be conducted by sending questionnaire to selected major power companies and power stations in Vietnam.
ETC and JICA Team will draft the questionnaire and send to MOIT for agreement.
MOIT and EVN will cooperate with ETC in the execution of the survey.



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