

**SAFETY REVIEW REPORT OF  
ON-GOING ODA LOAN PROJECT  
IN  
THE REPUBLIC OF THE PHILIPPINES**

**March 2017**

**JAPAN INTERNATIONAL COOPERATION AGENCY  
(JICA)**

**IPM SERVICES CO., LTD.  
KATAHIRA & ENGINEERS INTERNATIONAL**

<b>EI</b>
<b>JR</b>
<b>17-039</b>

## Table of Contents

Chapter 1 Outline of Study.....	1-1
1.1 Background and Objective .....	1-1
1.2 Details of the Project .....	1-2
1.3 Study Team Members .....	1-3
1.4 Study Schedule .....	1-3
1.5 Interviewees.....	1-4
1.5.1 Project Related Organization and Persons.....	1-4
1.5.2 Safety Related Organization and Persons.....	1-4
Chapter 2 Current Construction Safety Situation in the Philippines .....	2-1
2.1 Outlook of the Philippines Economy.....	2-1
2.2 Construction Industry Prospects .....	2-2
2.3 Legislative System.....	2-3
2.4 Outline of Key Laws and Regulations.....	2-5
2.4.1 DOLE-DO13 .....	2-5
2.4.2 DOLE/DPWH/DTI-CMDF,PCAB/DILG/PRC Joint Administrative Order No. 01 .....	2-6
2.4.3 Republic Act No. 9184 .....	2-7
2.4.4 Related Organizations .....	2-7
2.5 Construction Safety Control Structure.....	2-8
2.5.1 Relevant Agencies' Responsibilities.....	2-8
2.5.2 Contractor's Responsibility .....	2-10
2.6 Accreditation System.....	2-10
2.6.1 To Entities.....	2-10
2.6.2 To Individuals.....	2-10
Chapter 3 Safety Review on Site.....	3-1
3.1 Project Outline.....	3-1
3.2 Project Organization .....	3-3
3.3 Contract for Consultant's Services .....	3-3
3.4 Construction Contract.....	3-4
3.4.1 Conditions of Contract .....	3-4
3.4.2 Specification and BOQ.....	3-8
3.4.3 Construction Safety and Health Plan, (CSHP) .....	3-9
3.5 Safety Review on Site.....	3-10
3.5.1 Current Progress .....	3-10
3.5.2 Safety Management Activities etc. ....	3-12
3.6 Accident Statistics .....	3-18

Chapter 4 Observation During Safety Review on Site .....	4-1
4.1 Induction Training .....	4-1
4.2 Identification of the Safety Officer .....	4-1
4.3 Permit to Work (PTW) System .....	4-1
4.4 Risk Assessment .....	4-2
4.5 Analysis of Accident Cause .....	4-3
Chapter 5 Safety Seminar .....	5-1
5.1 Attendance .....	5-1
5.2 Contents of the Seminar .....	5-1
5.2.1 Section 1: History of Accident-prevention in the Construction Industry in Japan .....	5-2
5.2.2 Section 2: Introduction of JICA Safety Policy, Guidance and Hazard Prediction .....	5-3
5.2.3 Section 3: Outline of Study Results .....	5-4
5.2.4 Q and A in the Seminar .....	5-5
5.2.5 Issue of Certificate .....	5-6
Chapter 6 Recommendations .....	6-1
6.1 Recommendations to DOTr/JAC/CMJV .....	6-1
6.1.1 Joint Safety Inspection .....	6-1
6.2 Recommendation to the Contractor (CMJV) .....	6-1
6.2.1 Daily Safety Interface Meeting (DSIM) .....	6-1
6.2.2 Prevention of Falling Accidents Around Excavation Area for Footings of PTB .....	6-3
6.2.3 Unintended Use of a Backhoe for Unloading Concrete Pipes .....	6-4
<b>Appendices</b>	
Appendix-1 Safety Policy for Construction Works in Japanese ODA Projects .....	App-1
Appendix-2 Hearing Memo .....	App-3
Appendix-3 Site Organization Chart .....	App-10
Appendix-4 Seminar Slides .....	App-13

# Chapter 1 Outline of Study

## 1.1 Background and Objective

JICA has been carrying out approx. 350 numbers of ODA projects annually which include construction of Facilities and approx. 30 persons have lost their valuable lives by occupational accidents during construction. JICA made public on the web site, “Safety Policy for Construction Works in Japanese ODA Projects” dated on March 30, 2015 signed by former President of JICA (hereinafter referred to as “JICA Safety Policy”<sup>1</sup>), in which the following policy is stated.

- *The highest priority must be placed on ensuring safety and protecting human life in construction works of Japanese ODA projects.*
- *JICA is determined to improve prevention measures and reduce occupational accidents, with the aim of eventually eradicating all preventable accidents.*
- *JICA recognizes its role in disseminating the Japanese culture of safety"to all organizations and individuals engaged in Japanese ODA construction projects.*

Safety Review Study of On-going ODA Loan Project in the Republic of the Philippines (hereinafter referred to as “Study”) is regarded as a part of activities which JICA carries out to promote the full implementation of safety measures through site visits by JICA experts and missions.

Based on the recommendation made by the committee deployed by Ministry of Foreign Affairs of Japan, to discuss the measures to prevent recurrence of the similar Accident to that of Can Tho Bridge (Cuu Long) in Vietnam in September 2007, JICA initiated to carry out Safety Review, by a third-party consultant, of Special ODA Loan projects or Special Term for Economic Partnership (STEP) projects which include large scale and technically complex civil works. Thirteen projects were reviewed up to 2015, which are situated in Indonesia, Vietnam, Turkey, Uzbekistan, Philippine, Malaysia, Sri Lanka, India and Kenya.

The objective of this Study is, through carrying out activities item (1) to (4), to contribute prevention or mitigation of occupational accidents during construction of ODA Loan projects including third party/public accidents by drawing more attentions of relevant stakeholders to safety measures.

- (1) New Bohol Airport Construction and Sustainable Environment Protection Project detailed in Sub-Clause 1.2 (hereinafter referred to as the “Project”) was studied.
- (2) To collect the latest information on the laws, standards, etc. of the recipient countries regarding safety management in ODA Loan projects and occupational safety and health.

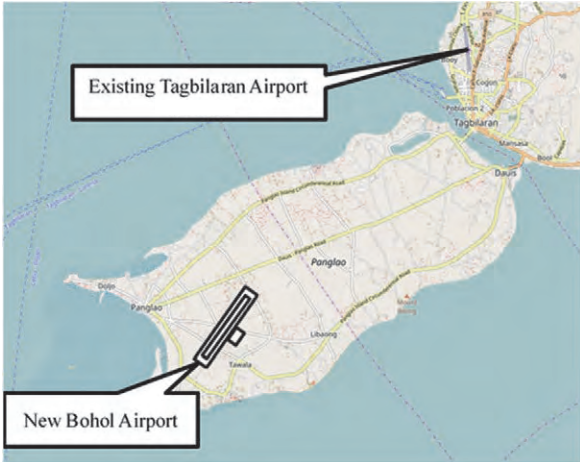
---

<sup>1</sup> A copy of JICA Safety Policy is attached in Appendix-1.

- (3) To conduct Accident cause analysis on the accidents occurred in the projects from various aspects, and to extract issues to address for prevention of accidents and to make a proposal for improvement as a recommendation.
- (4) To hold a seminar with attendance of the Employer, the Engineer, the Contractor, the Subcontractor etc. in which the following topics are presented.
  - (i) Outline of the Study results
  - (ii) Introduction of current situation of accidents in construction industry and examples of accident prevention measures taken in Japan
  - (iii) Introduction of “The Guidance for the Management of Safety for Construction Works in Japanese ODA Projects” (hereinafter referred to as “JICA Guidance”)

## 1.2 Details of the Project

**Table 1-1 Details of the Project**

Site Country	Project Name	Loan Agreement		The Engineer
		Date	Amount approved	
Panglao Island, Bohol, Republic of the Philippines	New Bohol Airport Construction and Sustainable Environment Protection Project	March 27, 2013	¥10,782 Million (STEP)	Japan Airport Consultants, Inc.
The Employer	The Contractor	Outline of the Project		
DOTr, Department of Transportation	Chiyoda Corporation and Mitsubishi Corporation JV (CMJV)	<p>By constructing a new airport in Panglao Island opposite side of the existing airport which is situated in State capital, Tagbilaran, an increase in conveniences and safety of air transport will be made and it also contributes sustainable development of the Bohol area.</p>  <p>©OpenStreetMap contributors, CC-BY-SA<sup>2</sup></p>		

<sup>2</sup> <http://www.openstreetmap.org/copyright/en> , <https://creativecommons.org/licenses/by-sa/2.0/>

### 1.3 Study Team Members

**Table 1-2 Study Team Members**

Name	Position	Company/Remarks
MITANI Katsuaki	Team Leader/Safety Management	IPM Services Co., Ltd. (IPMS)
IKENAGA Tetsuo	Safety and Accident-Prevention Measures 1	Katahira & Engineers International (KEI)
KADOONO Hitoshi	Safety and Accident-Prevention Measures 2	IPMS, only for analysis and assessment in Japan

### 1.4 Study Schedule

**Table 2-1 Study Schedule in Philippines**

Number of days	Day			Activities	Place
	November 2016				
1	6	Sun.	AM	Travelling Narita09:20-13:25Manila (JL741)	Manila
			PM		
2	7	Mon.	AM	Internal Meeting	
			PM	13:00 DOTr (Employer) hearing 15:30 DOLE-OSHC	
3	8	Tue.	AM	Meeting Record Preparation	
			PM	Travelling Manila14:40– 15:55Tagbilaran (PR-2777)	
4	9	Wed.	AM	Site Inspection with DOTr /JAC (Engineer)/CMJV (Contractor)	
			PM	Hearing from JAC	
5	10	Thu.	AM	Hearing from CMJV	
			PM		
6	11	Fri.	AM	Join Morning Gathering at 06:40	
			PM	Hearing from CMJV	
7	12	Sat.	AM	Data Compilation	
			PM		
8	13	Sun.	AM	Panglao Bohol	
			PM		
9	14	Mon.	AM		Preparation for Seminar
			PM		
10	15	Tue.	AM		Holding Seminar
			PM		
11	16	Wed.	AM		Travelling Tagbilaran 11:15– 12:30 Manila (PR-2774)
			PM		14:00 EEI Manila Hearing
12	17	Thu.	AM		9:30 Hearing from SOPI
			PM		14:30 Report to JICA Philippines Office
13	18	Fri.	AM		Travelling Manila14:35-19:45Narita (JL742)
			PM		

## 1.5 Interviewees

### 1.5.1 Project Related Organization and Persons

#### (1) JICA Philippines Office

Mr. Tetsuya Yamada	Deputy Representative
Mr. Keisuke Fukui	Section Chief
Ms. Satomi Sakaguchi	Planning Researcher
Ms. Amanda Bacani	Program Officer

#### (2) Department of Transportation- Project Management Office

##### New Bohol Airport Construction and Sustainable Environment Protection Project

Mr. Florencio G. Dela Cruz, Jr	Project Manager
Mr. Larry Holgado	Document Administration
Ms. Phing Grafilo	PMO-NBACSEPP
Mr. Brian	

#### (3) Japan Airport Consultants. Inc. NBAC-SEP Project Office

Mr. Tadashi Aoi	Project Manager (Director, Executive General Manager)
Mr. Yasuhiro Okamoto	Chief Material Engr.

#### (4) Chiyoda-Mitsubishi Joint Venture NBAC-SEP Project Office

Mr. Seiichiro Togashi	Project Director
Mr. Yasuo Tateoka	Project Manager
Mr. Toshinori Sasaya	Construction Manager/ Chief Civil Engineer
Mr. Von Obrian P. Suarez	HSE Officer (EEI)

#### (5) EEI Corporation EEI Corporation Head Office

Mr. Michael D. Arguelles	Assistant Vice President for SHES
Mr. Reynan I. Del Rosario	Safety Engineer

### 1.5.2 Safety Related Organization and Persons

#### (1) Department of Labor and Employment Occupational Safety and Health Center

Ms. Ma. Teresita S. Cucueco	Executive Director
Engr. Nelia G. Grandillos	Chief, Environmental Control Division

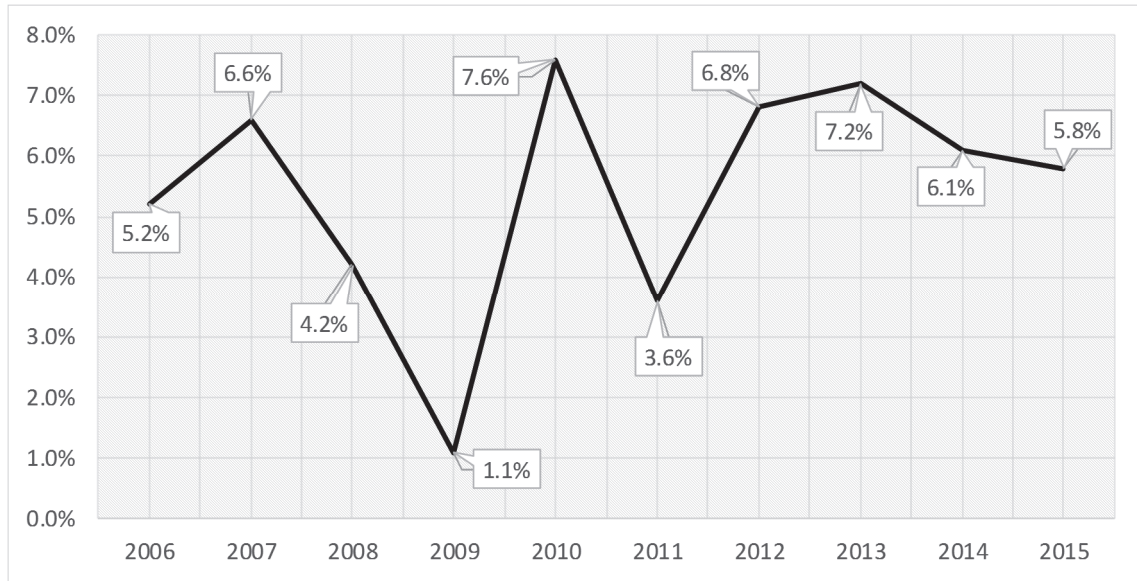
#### (2) Safety Organization of Philippines, Inc.

Mr. Eros G. Zuñiga, CSC	National President
-------------------------	--------------------

## Chapter 2 Current Construction Safety Situation in the Philippines

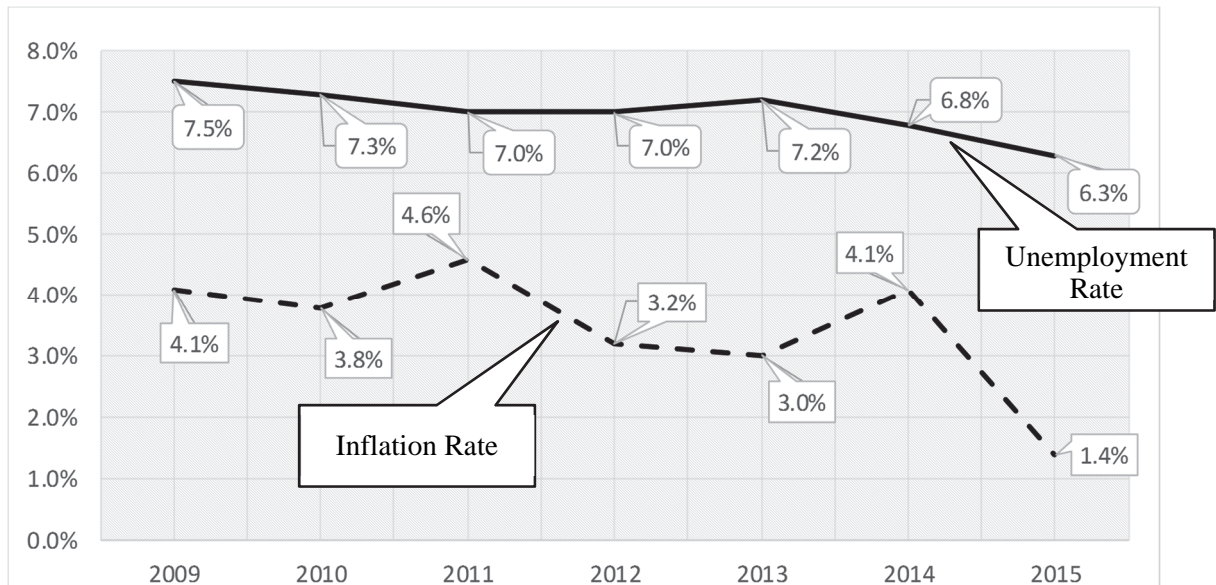
### 2.1 Outlook of the Philippines Economy

Global economic conditions heavily influence the performance of the Philippines economy. Due to Global Financial Crisis in 2009, the GDP growth rate of the Philippines economy in 2009 was 1.1%, but it rebounded to increase by 7.6% in 2010. The growth rate has stabilized over the past five years, as shown in Figure 2-1.



**Figure 2-1 GDP Growth Rate**

Source: Web of Ministry of Foreign Affairs of Japan, original data: National Statistics Office, Philippines



**Figure 2-2 Unemployment Rate and Inflation Rate**

The former President, Mr. Benigno Aquino appointed in June 2010 after the abovementioned Global Financial Crisis, achieved stable economic development during his administration from



2010 to 2016.

The 16th President, Rodrigo Duterte, appointed on June 20, 2016, introduced new plans to achieve more drastic economic growths. One of the objectives is to achieve 8% economic growth by 2020. Inflation rates and unemployment rates from 2009 to 2015 are shown in Figure 2-2.

The unemployment rates in 2009 and 2015 were 7.5 and 6.3% respectively, reflecting little change over the past seven years. Over the same period, the inflation rate peaked at 4.6% in 2011 and declined to 1.4% in 2015.

## 2.2 Construction Industry Prospects

The Philippine construction industry is expected to grow under the Duterte administration. In August 2016, the local economic journal “Business World” reported the Secretary of Department of Budget and Management had set out the following prospects for the construction industry market:

- The Government would spend up to PHP<sup>3</sup> 890 billion (approx. 1.9 trillion yen) on infrastructure in 2017 and “A golden age” for the construction industry over the next six years under the Duterte administration could be expected.
- Infrastructure spending in 2017 would be 17% higher than the 2016 figure of PHP 760 billion. Regarding infrastructure spending as a proportion of GDP, in 2016 it was 5.0% and then 5.2% in 2017, which seemed a nominal increase.  
The infrastructure spending until 2016 included disbursements to other capital outlays, which involved allocations for buildings and purchasing vehicles. As pure spending of the above period was 2~3%, the budget in 2017 has considerably increased in real terms.
- Public infrastructure has long been neglected by past governments, which significantly delayed the development of infrastructure in the Philippines, such as roads, bridges, ports, airports, railways, urban transit systems, irrigation systems and water systems.
- Infrastructure spending will expand from 5% to as high as 7% of GDP during the Duterte administration. In addition, there are also plans to accelerate the realization of PPP projects. Consequently, the construction industry is set to grow and the next six years would be a golden age for the industry in both public and private sectors.
- Considering the construction priority for infrastructure, the Government is best-placed to provide infrastructure such as mass transport systems and airports around the capital city area of Manila. He said that it would take a decade to fulfil the qualitative difference of

---

<sup>3</sup> PHP: Philippines Peso

infrastructure between Manila urban areas and elsewhere, based on their present plan and schedule.

The Time Trick Intelligence Center in England, which analyzes financial data, forecast that the Philippines industry market would increase by 9.2% annually from US\$30.2 billion (approx. 3.2 trillion yen) and reach US\$ 47.0 billion in 2020. The Center identified that, as well as accelerating infrastructure development and expansion to meet public and private sector construction demands, the Government has promoted infrastructure development under PPP and forecast that this trend would continue. Within the construction market, the housing sector is set to lead the way. The infrastructure sector will also record the highest annual average growth rate (by sector) of 14.1%, because the Government plans to develop a railway, expressway and harbor. It is estimated that the scale of the Infrastructure sector will reach US\$ 14.7 billion, equivalent to 31.3% of the overall sector.

As the BOT Center was reorganized and renamed the PPP Center in 2010 and the PPP Governing Board was established in 2013 under the previous Government, swifter project implementation is expected. Generally, the local conglomerates are competing very actively to obtain a franchise for the project.

In the Philippines, only contractors accredited by the Philippine Contractors' Accreditation Board (PCAB) may conclude construction contracts with their clients. For 2016-2017, the PCAB issued a total of 8,419 contractors' licenses; most of which renewal licenses. The breakdown is as follows:

**Table 2-1 Number of Contractors' Licenses issued**

Size	Category	No. of licenses issued	Share
Large 5.6%	AAAA	6	0.1%
	AAA	338	4.0%
	AA	128	1.5%
Medium 33.8%	A	985	11.7%
	B	1,858	22.1%
Small 60.6%	C	1,089	12.9%
	D	2,935	34.9%
	Trade/E	1,080	12.8%
		8,419	100.0%

### 2.3 Legislative System

Laws and regulations on construction safety management consist of those prepared from a safety management perspective and those prepared with the construction works management viewpoint in mind. Those are shown in Table 2-2 and 2-3 respectively.

**Table 2-2 Industrial Health and Safety Law**

Laws and Regulations	Name and Issued Year	Legal Basis
Labor Code	Labor Code, Book 4 Presidential Decree No.442 of 1974	
Occupational Safety and Health Standard	Occupational Safety and Health Standards (“OSHS”), 1979 and Ditto (as amended, 1989)	Labor Code Article 162
Department of Labor and Employment (“DOLE”) Department Order	DOLE Department Order No. 13 The Guidelines governing Occupational Safety and Health in the Construction Industry (“ <b>DOLE-DO13</b> ”) of 1998	OSHS as amended, 1989
Guidelines for implementation of DOLE Department Order No.13	<b>Procedural Guidelines</b> , DOLE-DO13, series of 1998	DOLE-DO13
DOLE Department Order	DOLE Department Order No. 16-01 of 2001 Amendments to Rule 1030 of the Occupational Safety and Health Standards Chapter 4 Article 162 (Training and Accreditation of Personnel on Occupational Safety and Health)	
DOLE Department Order	DOLE Department Order No. 18-A of 2011 Regulations in Labor Code Article106 (Contracting and Subcontracting Arrangements)	
Department of Public Works and Highways (“DPWH”) Department Order	DPWH Department Order No. 56 of 2005 Guidelines for implementation of DO13 for DPWH	DOLE-DO13
Department of Trade and Industry (“DTI”) Notice	DTI Notice of Feb. 2011 Warning to non-compliance with the laws on construction safety and health	
DPWH Circular	DPWH Circular No. 02 of March, 2011 Requiring a Construction Safety and Health Program in Building Permit application	DOLE-DO13
DOLE/DPWH/DTI- CMDF <sup>4</sup> / PCAB/DILG <sup>5</sup> /PRC <sup>6</sup> Joint Administrative Order	Joint Administrative Order No. 01 of April 2011 Government ordinance documents of Memorandum of Agreement (MOA) which confirmed to implementation of construction occupational safety and health management among DOLE/DPWH/DTI-CMDF, PCAB/ DILG/PRC based on DOLE-DO13	DOLE-DO13
Presidential Decree	Presidential Decree No. 626 of 1975 Program of workers' compensation	
Presidential Decree	Executive Order No. 307 of 1987 Establishment of Occupational Safety and Health Center	

<sup>4</sup> CMDF: Construction Manpower Development Foundation

<sup>5</sup> DILG: Department of the Interior and Local Government

<sup>6</sup> PRC: Professional Regulation Commission

**Table 2-3 Laws and Regulations administrating the construction industry  
including construction safety and health requirements**

Laws and Regulations	Name and Issued Year	Letter of Law
Presidential Decree	Presidential Decree No. 1746 of 1980 Establishment of Construction Industry Authority of the Philippines: CIAP which is the governing agency of PCAB	
Contractors Performance Evaluation System	Contractors Performance Evaluation System (CPES) Implementing Guidelines for public works: issued in 1998, amended 2006/2007/2008. 2008 version covers all types of construction projects	
Republic Act Government Procurement Reform Act	Republic Act No. 9184 of 2003, as amended 2009 “An act providing for modernization, standardization and regulation of the procurement activity of the Government and for other purpose” or called as “Reformed Act of Presidential Decree No. 1594”	

## 2.4 Outline of Key Laws and Regulations

### 2.4.1 DOLE-DO13

DOLE-DO13 (The Guidelines governing Occupational Safety and Health in the Construction Industry) issued in 1998 is almost equivalent to the “Industrial Safety and Health Law” in Japan and remains effective as of 2016. The corresponding Procedural Guidelines of DOLE-DO13 stipulate the legal basis, relevant agencies, roles, documentary procedures, facilities, training, etc. DOLE-DO13 and its Procedural Guidelines impose the following requirements on investors (clients) and contractors, together with penalties for any violation:

- Submission of a Construction Safety and Health Program (CSHP)
- Assignment of Safety Personnel
- Costing of Construction Safety and Health

The relevant structures are as follows:

**Table 2-4 Structure of DOLE DO No. 13 and Procedural Guidelines**

DOLE-DO13		Procedural Guidelines
Section 1	Definition of Terms	A. Objectives
Section 2	Jurisdiction	B. Legal Basis
Section 3	Delegation of Authority and Accreditation	C. Agencies involved in Construction Health and Safety Laws and Related Issuances
Section 4	Coverage	D. Definition of Terms
Section 5	Construction Safety and Health Program	E. Coverage
Section 6	Personal Protective Equipment	F. DOLE-DO13, Requirements
Section 7	Safety Personnel	1. Construction Safety and Health Program

DOLE-DO13		Procedural Guidelines
Section 8	Emergency Occupational Health Personnel and Facilities	pursuant to Section 5, DOLE-DO13
Section 9	Construction Safety Signage	2. Personal Protective Equipment by Type of Project
Section 10	Safety on Construction Heavy Equipment	3. Safety and Health Personnel and Skilled Worker
Section 11	Construction Safety and Health Committee	4. Construction heavy Equipment
Section 12	Safety and Health Information	5. Signage and Barricades
Section 13	Construction Safety and Health Training	6. Construction Safety and Health Committee
Section 14	Construction Safety and Health Reports	7. Construction Safety and Health Reports
Section 15	Construction Workers Skills Certificates	8. Cost of Construction Safety and Health Program
Section 16	Workers' Welfare Facilities	9. Safety and Health Information
Section 17	Cost of Construction Safety and Health Program	10. Welfare Facilities
Section 18	Miscellaneous	G. Procedures in the filling and processing of Construction Safety and Health Program (CSHP)
Section 19	Violations and Penalties	H. Violation and Penalties
Section 20	Effectivity	List of Annexes PPE-1 Classification of construction works/ activities for purposes of determination of mandatory minimum Personal Protective Equipment (PPE) requirements CHE-1 Crane Inspection Checklist

Section F of the Procedural Guidelines specifies the minimum requirements for approval of a Construction Safety and Health Program (CSHP) in detail for the convenience of persons in charge of preparing CSHP and those in charge of running OSHP on site.

#### 2.4.2 DOLE/DPWH/DTI-CMDF,PCAB/DILG/PRC Joint Administrative Order No. 01

On January 27, 2011, ten workers died when an electric gondola collapsed at a high-rise building construction site in Makati. This accident triggered a national rethink on the importance of construction safety.

DOLE, DTI and DPWH took immediate action, which was followed by the Memorandum of Agreement (MOA) by DOLE/DPWH/DTI-CMDF,PCAB/DILG/PRC in April 2011 to strengthen coordination and linkages to promote the welfare of construction workers and the growth of the construction industry. Soon after, Joint Administrative Order No. 01 was issued for strict implementation of MOA provisions as follows:

- Submission of a DOLE-approved Construction Safety and Health Program (CSHP) prior to issuing all building permit;
- Decentralizing CSHP approval from the Bureau of Working Conditions (BWC) to DOLE Regional Offices;

- DOLE Regional Offices through its labor inspectorate to undertake the necessary inspection and verification;
- The Philippine Contractors' Accreditation Board (PCAB) to blacklist violators;
- In cases of imminent danger or when a work stoppage order has been issued by DOLE Regional Offices, all concerned offices to be notified within 48hours of the said issuance;
- All contractors, subcontractors and specialty contractors to first secure a license from PCAB before engaging in any construction activity;
- All Authorized Managing Officers (AMOs) of the contractors to undergo a safety and health orientation course as a requirement for issuing the Contractor's license; and
- CMDF to offer a safety and health orientation course for AMOs and also conduct a one-day safety orientation seminar for construction workers.

The structure of Joint Administration Order No. 01 is as follows:

**Table 2-5 Structure of Joint Administrative Order No. 01**

Section 1: Purpose and Scope	Section 5: Inter-Agency Action Plan
Section 2: Guiding Principles	Section 6: Funding Requirement
Section 3: Agency Agreements and Responsibilities	Section 7: Effectivity
Section 4: Inter-Agency Task Force	

#### 2.4.3 Republic Act No. 9184

P. D. 1594 "Prescribing policies, guidelines, rules and regulations for Government infrastructure contracts", initially issued in 1978, was revised in 2000, including the requirements of DOLE-DO13. Thereafter, P. D. 1594 was superseded by R.A. 9184 issued in 2003. R.A. 9184 also includes the requirements of DOLE-DO13 and mandates the inclusion of construction safety and health documents in pre-bid/bid/contract documentation.

The Government Procurement Policy Board (GPPB) was also established to administer procurement activities of the Government. GPPB prepared standard bid documents (the latest version of which was the 4th Edition in December 2010) to procure infrastructure projects, consulting services and goods respectively.

In 2016, Implementing Rules and Regulations (IRR) were amended.

#### 2.4.4 Related Organizations

The following agencies are listed in C: Agencies involved in construction health and safety laws and related issuances of Procedural Guidelines of DOLE-DO13:

**Table 2-6 List of Agencies in Procedural Guidelines**

Agency	Abbreviation
(1) Department of Labor and Employment	DOLE
(a) Bureau of Working Conditions	BWC
(b) Regional Offices	DOLE-RO
(c) Employees' Compensation Commission	ECC
(d) Occupational Safety and Health Center	DOLE-OSHC
(e) Technical Education Skills Development Authority	TESDA
(2) Department of Trade and Industry	DTI
(a) Construction Industry Authority of the Philippines	CIAP
(b) Construction Manpower Development Foundation	CMDF
(c) Philippine Contractors Accreditation Board	PCAB
(3) Department of Health	DOH
The Non-Communicable Disease Control Office	
(4) Department of Public Works and Highways	DPWH
Office of the Building Officials	OBO
(5) Department of the Interior and Local Government	DILG
Bureau of Fire Protection	
(6) Department of Environment and Natural Resources	DENR
Environmental Management Bureau	EMB
(7) Construction Industry Tripartite Council	CITC

**2.5 Construction Safety Control Structure**

**2.5.1 Relevant Agencies' Responsibilities**

In addition to the provisions stipulated in C of Procedural Guidelines of DOLE-DO13, the Joint Administrative Order No. 01 issued in 2011 further confirmed the relevant agencies' responsibilities.

**2.5.1.1 Department of Labor Employment (DOLE)**

Articles 162 and 165, Chapter 2, Book IV of Labor Code provide that "The Department of Labor and Employment shall be solely responsible for administering and enforcing occupational safety and health laws." DOLE-DO13 issued in 1998, together with its Procedural Guidelines, provide guidelines governing Occupational Safety and Health in the Construction Industry.

The demarcation of responsibilities in DOLE is as shown in Table 2-7.

**Table 2-7 Demarcation of responsibilities**

Role/Function	Responsibility
Planning	BWC
Enforcement including inspection, verification and stop order	Regional Offices
Training	OSHC
Employees' Compensation	ECC
Skills Development	TESDA

2.5.1.2 Department of Trade and Industry (DTI)

Where contractors fail to comply with DOLE-DO13, Labor standard laws, including Occupational Safety and Health Standards (OSHS), through CIAP, the DTI can suspend or revoke the PCAB license of such contractors, evaluate their operating capability and reflect the results in the bid evaluation.

Through CMDF, DTI undertakes training to develop skills, boost safety and other supervisory/managerial courses as well as helping develop skills standards for the construction industry. The PCBA License is not renewable without a certification of attending an OSH study course by Authorized Managing Officers (AMOs) of contractors.

2.5.1.3 Department of Public Works and Highways (DPWH)

In DOLE-DO13, the DPWH is responsible for administering and enforcing P. D. 1096 (National Building Code and Its Implementing Rules and Regulations). According to DPWH D. O. 56, the DPWH implements DOLE-DO13, including CPES/PCAB-related evaluation of/penalty to contractors.

In addition, Joint Administrative Order No. 01 specifically provides that “The DPWH shall issue a Memorandum Circular instructing all local Building Officials to require the submission of a DOLE-approved Construction Safety Health Program (CSHP) prior to issuing all building permit.”

2.5.1.4 Department of the Interior and Local Government (DILG)

DILG is responsible for implementing the provisions of P. D. 1185 (Fire Code), which provides standards, rules and regulations on fire safety, prevention, protection and control/suppression.

Joint Administrative Order No. 01 requires DILG to issue a corresponding directive to the Local Government Units (LGUs) reiterating:

- the requirements of DOLE-DO13, D. O. 18 (regulations governing contacting and subcontracting arrangements) and Rule 1020 (Registration) of the OSHS;
- the licensing requirements of the DTI-PCAB pursuant to DILG Memorandum Circulars 2004-65 and 65A; requiring all contractors, subcontractors and specialty contractors to obtain a license from PCAB before engaging in any construction activity in the country.



## 2.5.2 Contractor's Responsibility

DOLE-DO13 stipulates contractors' responsibilities concerning construction safety and health. DOLE-DO13 is a cyclopedic law; seemingly compiled using the Industrial Safety and Health Act in Japan and ILO Standards as references. Investors (clients) may impose additional requirements through construction contract agreements.

## 2.6 Accreditation System

### 2.6.1 To Entities

The following accreditations are issued to entities with regard to safety and health:

**Table 2-8 Accreditations and Certifying Entity**

Accreditations/Certifying Entity	DOLE	DPWH	PCAB
Contractor's License			●
Building permit		●	
Occupational Safety and Health (OSH) Consultancy Organization	●		
Occupational Safety and Health (OSH) Training Organization	●		
Testing Organization for Construction Heavy Equipment	●		

### 2.6.2 To Individuals

The following accreditations are issued to individuals with regard to safety and health. The educational institutions certified by the DOLE for Accreditation can issue the same certification in DOLE-DO13.

**Table 2-9 Accreditations and Certifying Entity**

Certifying Entity Accreditation	Training period	DOLE	DOLE-CMDF	DOLE-TESDA
Industrial Doctor (Physician, Dentist) · First Aider (Nurse)		●		
Safety Officer	Basic Training: 40 hours	●		
Contractor's Authorized Managing Officers	Basic Training: 40 hours		●	
Occupational Safety and Health (OSH) Practitioner / Consultant	Advanced Training: 80 hours	●		
Trainers on Occupational Safety and Health (OSH)	Basic Training: 40hours Trainers Training Course: 24 hours	●		
Skilled Worker for the Critical Operations /Occupations				●
Operators of Construction Heavy Equipment				●
Construction Workers	One-day Safety Orientation Seminar		●	

## Chapter 3 Safety Review on Site

### 3.1 Project Outline

**Table 3-1 Project Outline**

Item	Contents
Project Name	New Bohol Airport Construction and Sustainable Environment Protection Project
Loan Agreement (L/A)	JICA Loan No. PH-P256 signed on March 27, 2013 Amount approved:10,782million JPY (Total Project Cost:13,348million JPY) Social & Environmental Consideration:Category A
Project Purpose	By constructing a new airport in Panglao Island opposite side of the existing airport which is situated in State capital, Tagbilaran, an increase in conveniences and safety of air transport will be made and it also contributes sustainable development of the Bohol area.
Project Site	Panglao Island, Bohol Province, Republic of the Philippines
The Employer	Department of Transportation, DOTr (Name was changed by organizational reform due to change of Government. At the time of L/A signing, the Employer was Department of Transportation and Communication, DOTC)
Consultant	A consortium of Japan Airport Consultants, Inc., (JAC) and Phil. JAC, Inc. The Engineer under Construction Contract is Japan Airport Consultants, Inc.
The Contractor	A joint venture of Chiyoda Corporation – Mitsubishi Corporation (CMJV)
Time for Completion of Section (Original) <sup>7</sup>	Section A (Access Road): 365 calender days from the Commencement Date Section B (Works except Section A): 912 calender days from the Commencement Date
<b>Scope of the Works (Original)</b>	
Civil Works	Runway (Phase I) 2,000m, (Phase II) 2,500m Taxiways Two Stub Taxiways (32,000m <sup>2</sup> ) Apron A321-6Nos. or B-777-3Nos. (56,000 m <sup>2</sup> ) Carpark 193Lots (8,720 m <sup>2</sup> ) Access Road (3km Long, two Lanes for each direction)
Building Works	Passenger Terminal Building (PTB), Single Story (8,300 m <sup>2</sup> ) Control Tower Building, 9-Story, 33m High (410m <sup>2</sup> ) Administration Building, 2-Story (1,000m <sup>2</sup> ) Fire Station / Maintenance Building, ICAO <sup>8</sup> Category 9 (900m <sup>2</sup> ) Power House Building, 3,000KVA (900m <sup>2</sup> ) Water Tank / Pump House, 450t Storage (500m <sup>2</sup> )
Utility Works	Power Supply System, Water Supply System and Sewage Treatment System
Air Navigation Facilities	Instrument Landing System (ILS)/Glide Slope(GS) and Localizer (LLZ), Category 1 for Runway 21 <sup>9</sup> ATS and Telecommunications Meteorological Observation System
Aeronautical Ground Lighting	Precision Approach Lighting System (PALS) for Runway 21 Simple Approach Lighting System (SALS) for Runway 03

<sup>7</sup> The Commencement Date was agreed to be June 22, 2015. Assessment of Extension of Time for Completion of Section A was on-going due to the delay in lang acquisition. And ths same for Section B was also on-going due to Variation of the Works, Extension of Runway to 2,500m by 500m and change in PTB from Single Story to Two Story.

<sup>8</sup> ICAO: International Civil Aviation Organization

<sup>9</sup>Runways are named by a number between 01 and 36, which is generally the magnetic azimuth of the runway's heading in deca degrees. This heading differs from true north by the local magnetic declination.

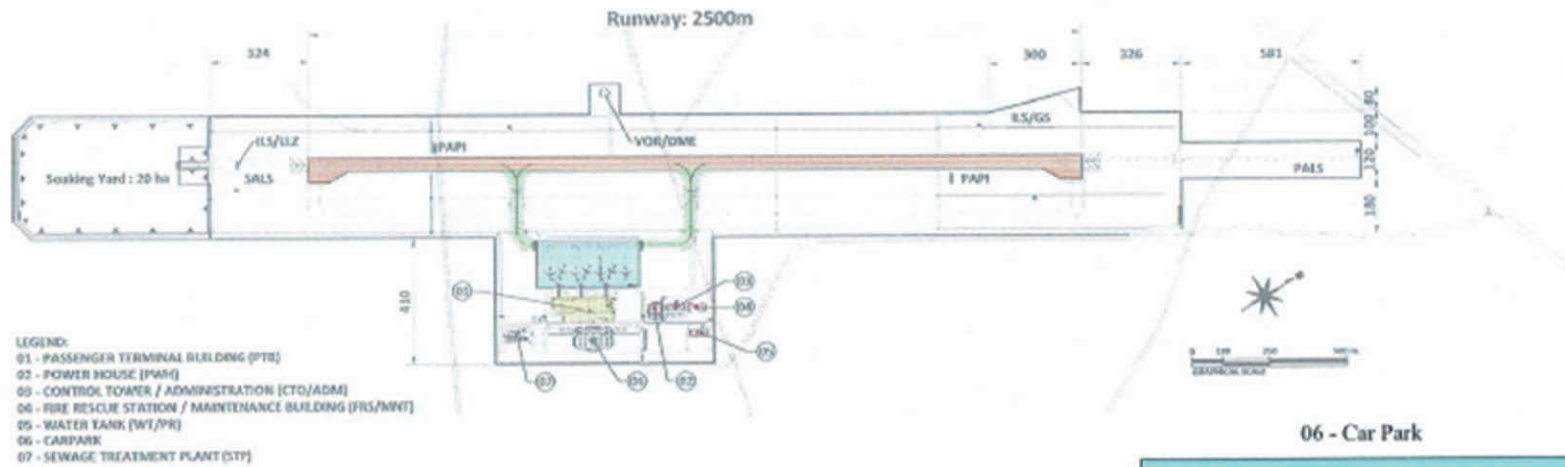
01 - Passenger Terminal Building



02 - Power House Building



03 - Admin & CTO Building



04 - Fire & Rescue and Maintenance Building



05 - Water Tank and Pump House



06 - Car Park



07 - Sewage Treatment Plant

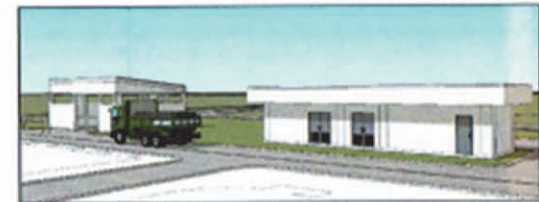


Figure 3-1 Completion Image/Drawing of New Bohol Airport

Source: JAC

### 3.2 Project Organization

(1) According to the Construction Contract of the New Bohol Airport Construction and Sustainable Environment Protection Project entered into on March 17, 2015,

The Employer: Department of Transportation (DOTr) [former DOTC]

The Engineer: Japan Airport Consultants Inc. (JAC)

The Contractor: Chiyoda Corporation – Mitsubishi Corporation JV, (CMJV),

which is the typical triangle formation. FIDIC “Conditions of Contract for Construction MDB Harmonized Edition June 2010” (MDB 2010) apply as General Conditions.

(2) The number of staff of each organization is stated below.

**Table 3-2 Number of Staff**

Organization	No. of staff
The Employer: DOTr	10 (PM, APM, Project Engineer, Inspector, Document Administrator etc.)
The Consultant: JAC	28(shown in organization chart, excluding support staff, i.e. CAD Operators) Foreign staff :16, Local staff 12
The Contractor: CMJV	20 (Japanese 8, Local staff 12) Staff from Mitsubishi Corporation are not resident now but they will take their posts as the project progresses. Number of EEI(subcontractor): 200~300

### 3.3 Contract for Consultant’s Services

The consulting services on the construction supervision of this project are specified in the Contract for Consultant’s Services (Consultant Contract) signed on May 5, 2014 between the Employer DOTC (present DOTr) and JAC/Phil.JAC. General Conditions of Contract, Time-Based version is adopted for the Consultant Contract, which is the standard for JICA ODA Loan projects. Clauses regarding safety supervision in Appendix-A Description of Services are excerpted as follows:

#### 4. Scope of the consulting services

##### 4-1 Assistance in Bidding

*The Consultant shall:*

*(b) Evaluate bids in accordance with the criteria set force in bidding documents. In such evaluation, the Consultant shall carefully confirm that bidders’ submissions in their technical proposal including, but not limited to, site organization, mobilization schedule, method statement, construction schedule, **safety plan**, have been prepared in harmony each other and will meet such requirements set force in applicable laws and regulations, specifications and other parts of the bidding documents;*

##### 4-2 Construction supervision

*The Consultant shall:*

*(d) Review and approve the proposals submitted by the contractors which includes work*

program, method statements, material sources, manpower and equipment deployment. In light of Section 3.03<sup>10</sup> of Guidelines for the Employment of Consultants under Japanese ODA Loans, April 2012, the Consultant shall pay attention, in particular, to whether such proposals will meet the safety requirements set forth in the applicable laws and regulations, the specifications or other parts of the contract;

(j) Supervise the works so that all the contractual requirements will be met by the contractors, including those in relation to i) quality of the works, ii) safety and iii) protection of the environment. In light of Section 3.03 of Guidelines for the Employment of Consultants under Japanese ODA Loans (April 2012), the Consultant shall confirm that an accident prevention officer<sup>11</sup> proposed by Contractor is duly assigned at the project site and that construction works are carried out according to the requirements set force in the applicable laws and regulations, the specifications or other parts of the contract;

The term “safety” cannot be found in the assignment schedule (Appendix C-Expert Schedule) of the Consultant Contract. It is stated in the TOR but not the assignment schedule, which means each engineer in charge of construction supervision is also responsible for safety management of his/her section.

### 3.4 Construction Contract

#### 3.4.1 Conditions of Contract

The Project applies MDB 2010 as General Conditions. Under these Conditions of Contract, clauses which specify the requirements regarding occupational safety and health are as follows:

**Table 3-3 Related Clause for Occupational Safety and Health in MDB 2010**

Clause Number/ Title	Provisions
1 General Provisions	
1.1 Definitions 1.1.2 Parties and Persons	<p>1.1.2.6 “Employer’s Personnel” means the Engineer, the assistants referred to in Sub-Clause 3.2 [Delegation by the Engineer] and all other staff, labour and other employees of the Engineer and of the Employer; and any other personnel notified to the Contractor, by the Employer or the Engineer, as Employer’s Personnel.</p> <p>1.1.2.7 “Contractor’s Personnel” means the Contractor’s Representative and all personnel whom the Contractor utilises on Site, who may include the staff, labour and other employees of the Contractor and of each Subcontractor; and any other personnel assisting the Contractor in the execution of the Works.</p>

<sup>10</sup> Guidelines for Employment of Consultants under Japanese ODA Loans, April 2012. Section 3.03 (4) states as follows. “(4) Safety shall be emphasized in the implementation of the project. The consulting services related to safety measures shall be specified, if necessary, in the Terms of Reference.”

<sup>11</sup> Accident prevention officer is in Sub-Clause 6.7 Health and Safety of MDB 2010.

Clause Number/ Title	Provisions
<b>4 The Contractor</b>	
4.8 Safety Procedures	<p>The Contractor shall:</p> <ul style="list-style-type: none"> <li>(a) comply with all applicable safety regulations,</li> <li>(b) take care for the safety of all persons entitled to be on the Site,</li> <li>(c) use reasonable efforts to keep the Site and Works clear of unnecessary obstruction so as to avoid danger to these persons,</li> <li>(d) provide fencing, lighting, guarding and watching of the Works until completion and taking over and</li> <li>(e) provide any Temporary Works (including roadways, footways, guards and fences) which may be necessary, because of the execution of the Works, for the use and protection of the public and of owners and occupiers of adjacent land.</li> </ul>
4.18 Protection of the Environment	<p>The Contractor shall take all reasonable steps to protect the environment (both on and off the Site) and to limit damage and nuisance to people and property resulting from pollution, noise and other results of his operations.</p> <p>The Contractor shall ensure that emissions, surface discharges and effluent from the Contractor's activities shall not exceed the values stated in the Specification or prescribed by applicable Laws.</p>
<b>6 Staff and Labour</b>	
6.1 Engagement of Staff and Labour	<p>Except as otherwise stated in the Specification, the Contractor shall make arrangements for the engagement of all staff and labour, local or otherwise, and for their payment, feeding, transport and, when appropriate, housing.</p> <p>The Contractor is encouraged, to the extent practicable and reasonable, to employ staff and labour with appropriate qualifications and experience from sources within the Country.</p>
6.2 Rates of Wages and Conditions of Labour	<p>The Contractor shall pay rates of wages, and observe conditions of labour which are not lower than those established for the trade or industry where the work is carried out. If no established rates or conditions are applicable, the Contractor shall pay rates of wages and observe conditions which are not lower than the general level of wages and conditions observed locally by employers whose trade or industry is similar to that of the Contractor.</p> <p>The Contractor shall inform the Contractor's Personnel about their liability to pay personal income taxes in the Country in respect of such of their salaries, wages, allowances and any benefits as are subject to tax under the Laws of the Country for the time being in force, and the Contractor shall perform such duties in regard to such deductions thereof as may be imposed on him by such Laws.</p>
6.4 Labour Laws	<p>The Contractor shall comply with all the relevant labour Laws applicable to the Contractor's Personnel, including Laws relating to their employment, health, safety, welfare, immigration and emigration, and shall allow them all their legal rights.</p> <p>The Contractor shall require his employees to obey all applicable Laws, including those concerning safety at work.</p>

Clause Number/ Title	Provisions
6.6 Facilities for Staff and Labour	<p>Except as otherwise stated in the Specification, the Contractor shall provide and maintain all necessary accommodation and welfare facilities for the Contractor's Personnel. The Contractor shall also provide facilities for the Employer's Personnel as stated in the Specification.</p> <p>The Contractor shall not permit any of the Contractor's Personnel to maintain any temporary or permanent living quarters within the structures forming part of the Permanent Works.</p>
6.7 Health and Safety	<p>The Contractor shall at all times take all reasonable precautions to maintain the health and safety of the Contractor's Personnel. In collaboration with local health authorities, the Contractor shall ensure that medical staff, first aid facilities, sick bay and ambulance service are available at all times at the Site and at any accommodation for Contractor's and Employer's Personnel, and that suitable arrangements are made for all necessary welfare and hygiene requirements and for the prevention of epidemics.</p> <p>The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility, and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.</p> <p>The Contractor shall send, to the Engineer, details of any accident as soon as practicable after its occurrence. The Contractor shall maintain records and make reports concerning health, safety and welfare of persons, and damage to property, as the Engineer may reasonably require.</p> <p>HIV-AIDS Clause ----not quoted</p>
6.13 Supply of Foodstuffs	<p>The Contractor shall arrange for the provision of a sufficient supply of suitable food as may be stated in the Specification at reasonable prices for the Contractor's Personnel for the purposes of or in connection with the Contract.</p>
6.14 Supply of Water	<p>The Contractor shall, having regard to local conditions, provide on the Site an adequate supply of drinking and other water for the use of the Contractor's Personnel.</p>
6.15 Measures against Insect and Pest Nuisance	<p>The Contractor shall at all times take the necessary precautions to protect the Contractor's Personnel employed on the Site from insect and pest nuisance, and to reduce the danger to their health. The Contractor shall comply with all the regulations of the local health authorities, including use of appropriate insecticide.</p>

Clause Number/ Title	Provisions
6.20 Forced Labour	The Contractor shall not employ forced labour, which consists of any work or service, not voluntarily performed, that is exacted from an individual under threat of force or penalty, and includes any kind of involuntary or compulsory labour, such as indentured labour, bonded labour or similar labour-contracting arrangements.
6.21 Child Labour	The Contractor shall not employ children in a manner that is economically exploitative, or is likely to be hazardous, or to interfere with, the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral, or social development. Where the relevant labour laws of the Country have provisions for employment of minors, the Contractor shall follow those laws applicable to the Contractor. Children below the age of 18 years shall not be employed in dangerous work.
6.23 Workers' Organizations	In countries where the relevant labour laws recognize workers' rights to form and to join workers' organizations of their choosing without interference and to bargain collectively, the Contractor shall comply with such laws. Where the relevant labour laws substantially restrict workers' organizations, the Contractor shall enable alternative means for the Contractor's Personnel to express their grievances and protect their rights regarding working conditions and terms of employment. In either case described above, and where the relevant labour laws are silent, the Contractor shall not discourage the Contractor's Personnel from forming or joining workers' organizations of their choosing or from bargaining collectively, and shall not discriminate or retaliate against the Contractor's Personnel who participate, or seek to participate, in such organizations and bargain collectively. The Contractor shall engage with such workers' representatives. Workers' organizations are expected to fairly represent the workers in the workforce
6.24 Non-Discrimination and Equal Opportunity	The Contractor shall not make employment decisions on the basis of personal characteristics unrelated to inherent job requirements. The Contractor shall base the employment relationship on the principle of equal opportunity and fair treatment, and shall not discriminate with respect to aspects of the employment relationship, including recruitment and hiring, compensation (including wages and benefits), working conditions and terms of employment, access to training, promotion, termination of employment or retirement, and discipline. In countries where the relevant labour laws provide for non-discrimination in employment, the Contractor shall comply with such laws. When the relevant labour laws are silent on non-discrimination in employment, the Contractor shall meet this Sub-Clause's requirements. Special measures of protection or assistance to remedy past discrimination or selection for a particular job based on the inherent requirements of the job shall not be deemed discrimination

In the FIDIC Construction Contract MDB Harmonized Edition, following items changed from Version March 2006 version to the June 2010 version (MDB 2010);

- 6.20 Forced Labor ...Addition of a detailed definition of "Forced Labor"



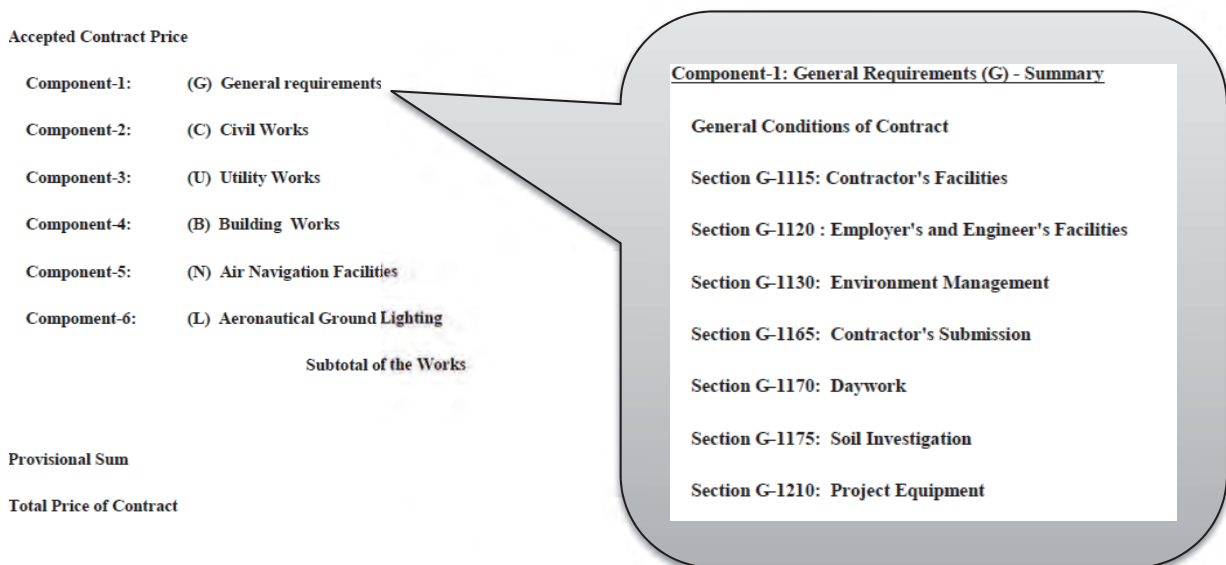
- 6.21 Child Labor
  - ...Compliance with laws and prohibition of hazardous work for those below the age of 18
- 6.23 Workers' Organization (New Sub-Clause)
  - ...Guarantee of workers' right to form and join workers' organizations
- 6.24 Non-Discrimination and Equal Opportunity (New Sub-Clause)

The reason for the above change is the presumption that the World Bank has changed the Safeguard Policy of Environmental and Social Consideration.

### 3.4.2 Specification and BOQ

The Specification is included in Document II: Specification and requirements for Health and Safety and stated in the General Requirement of Vol 1/4.

BOQ is in the h) Arithmetically-corrected Bill of Quantities of Document IV: completed Schedule and the items in BOQ correspond to items in the Specification.



**Figure 3-2 BOQ Framework**

It is presumed that pay items for occupational health and safety are to be included in Component 1: General Requirements. However no separate pay items are provided in General Requirements. There are items of Insurance for Works and Contractors's equipment, insurance against injury to persons and damage to property, which are specified in Clause 18 of the General Conditions of Contract.

Although no pay items to cover the cost of Occupational health and safety are included in BOQ, it is understood that this is the responsibility of the Contractor and the cost is deemed included in BOQ items as on-site overheads.

### 3.4.3 Construction Safety and Health Plan, (CSHP)

The Contractor submitted the CSHP to DOLE Regional Office No. VII in Cebu City pursuant to the DOLE-DO13 stipulation on August 9, 2016 and an approved letter of the same Office was issued on August 10, 2016. The table of contents of CSHP Ver. C dated November 9, 2015 is shown in Table 3-4. In the same table, one column is provided to show the corresponding clauses of “The Guidance for Management of Safety of Construction Works in Japanese ODA Projects” (JICA Guidance). Although the order of clauses is not the same as that specified in JICA Guidance, the items required in JICA Guidance are included in CSHP.

**Table 3-4 Comparison of Table of Contents of CSHP and Safety Plan of JICA Guidance**

No.	Description	Page	Corresponding Itmes in the Safety Plan of JICA Guidance <sup>12</sup>
1.0	Project Description	4	
2.0	CMJV Safety, Quality, and Environmental Policy	5	(1)Safety Management Policy
3.0	Safety Commitment and Policy	6	(1)Safety Manaement Policy
4.0	Functions and Resposibilites	7	(2)Safety Manaement Formation
5.0	Safety and Health Promotion and Continuing Information Dissmination	10	
	5.2 Safety	10	(3) Implementation of PDCA Cycle
	5.6 Constructability Review	13	(4)Monitoring
	5.9 Review of Subcontractors Safety Plan/Job Hazard Analysis	14	
	5.5 Job Hazard Risk Assesment and Job Hazard Analysis	13	(6) Voluntary Safety Managemet Action
	5.12 Foreman Daily Safety Briefings (Daily Tool Box Meeting)	15	(7) Sharing of Information
	5.15 Safety Communication	15	
	5.8 New Hire Orientation	14	(5) Safety Training/Education
	5.10 Craft/Training	14	(7) Sharing of Information
	5.11 Staff Training/Education	14	
	5.13 Safety Committee Organization	15	(2)Safety Management Formation
6.0	Accident and Incident Investigation and Reporting	15	(3) Implementation of PDCA Cycle (4) Monitoring
7.0	Protection of the General Public within the Vicinity of the Construction Site	16	
8.0	Environmental Control	18	
9.0	Guarding of Hazardous Machinery	25	
10.0	Personal Protective Equipment	26	
11.0	Handling of Hazardous Substances	28	
12.0	General Material Handling and Storage Procedure	31	
13.0	Workers, Skills and Certification (for Critical occupation)	33	(5) Safety Training/Education

<sup>12</sup> Refer to 3.1.1 Items for inclusion of the Safety Plan of JICA Guidance.

No.	Description	Page	Corresponding Itmes in the Safety Plan of JICA Guidance <sup>12</sup>
14.0	Provisions for Transportation Facilities for Worker in Case of Emergency	34	(8) Emergency Responce
15.0	Temporary Fire Protection Facilities and Equipment	34	
16.0	First Aid and Health Care Medicines Equipment and Facilities	34	
17.0	Workers Welfare Facilities	36	
18.0	Proposed Hours of Work and Rest Break	39	
19.0	Construction Waste Disposal	39	
20.0	Testing and Inspection of Heavy Equipment	39	
21.0	Disaster and Emergency Preparedness Contingency Plan	41	(8) Emergency Responce
22.0	Standard Operating Procedure and Job Hazard Analysis	44	(6)Voluntary Safety Management Action
23.0	Penalties/Sanctions in Violation of the Provision/s of the CSHP	50	
ANNEX			
A	Accident Report Frm	52	(3)PDCA Cycle
B	Safety Committee Table of Organization	53	(2)Safety Management Formation

### 3.5 Safety Review on Site

#### 3.5.1 Current Progress

This project is carried out under STEP (Special Terms for Economic Partnership) and categorized as Environmental and Social Consideration Category A. Construction work was executed at a resort area called Panglao Island. To reduce the environmental burden during the construction period and the operation and maintenance period on completion of the project, under the “Eco Airport” concept, Japanese technologies, such as air-conditioning using energy-saving technology, solar power generation, LED illumination, geotextile membranes in soaking areas and grouting work etc. will be employed.

With regards to noise, dust and waste materials, the Contractor implemented countermeasures such as setting up a construction schedule in daytime (no night-time work), periodical water-sprinkling on site, executing a waste control plan to dispose of and reuse construction waste. During the operation period, as countermeasures for noise and waste materials, setting up a noise buffer zone, setting up a take-off and landing schedule in daytime (no night flights) and a waste material control plan, including segregation/reuse, are to be implemented. Throughout the construction and operation period, the project design will aim to prevent land contamination from the control of waste oil etc. and prevent water pollution at sea by a waste water treatment plant purifying drained water inside the airport and soaking into the ground in the regulating pond.

The ongoing work activities as of November 2016 are as follows:

- Passenger Terminal Building (PTB) Foundation works at the Passenger Terminal Building (Independent footing and RC Column: Reinforcement-bar works and Form works)



- Administration and Control Tower Building (CTO/ADM)  
Tower foundation (Re-bar works)



- Runway  
Trial for subgrade and road base compaction  
Runway extension (L=500m) ripping



- Drainage: Concrete Pipe Laying including Runway Crossing



- Plants: Aggregate Crushing Plant, Concrete Batching plant and Asphalt plant



According to the Monthly Progress Report of CMJV, the progress rate of the Project was 12.34% at the end of October 2016 and 13.60% at the end of November the same year.

### 3.5.2 Safety Management Activities etc.

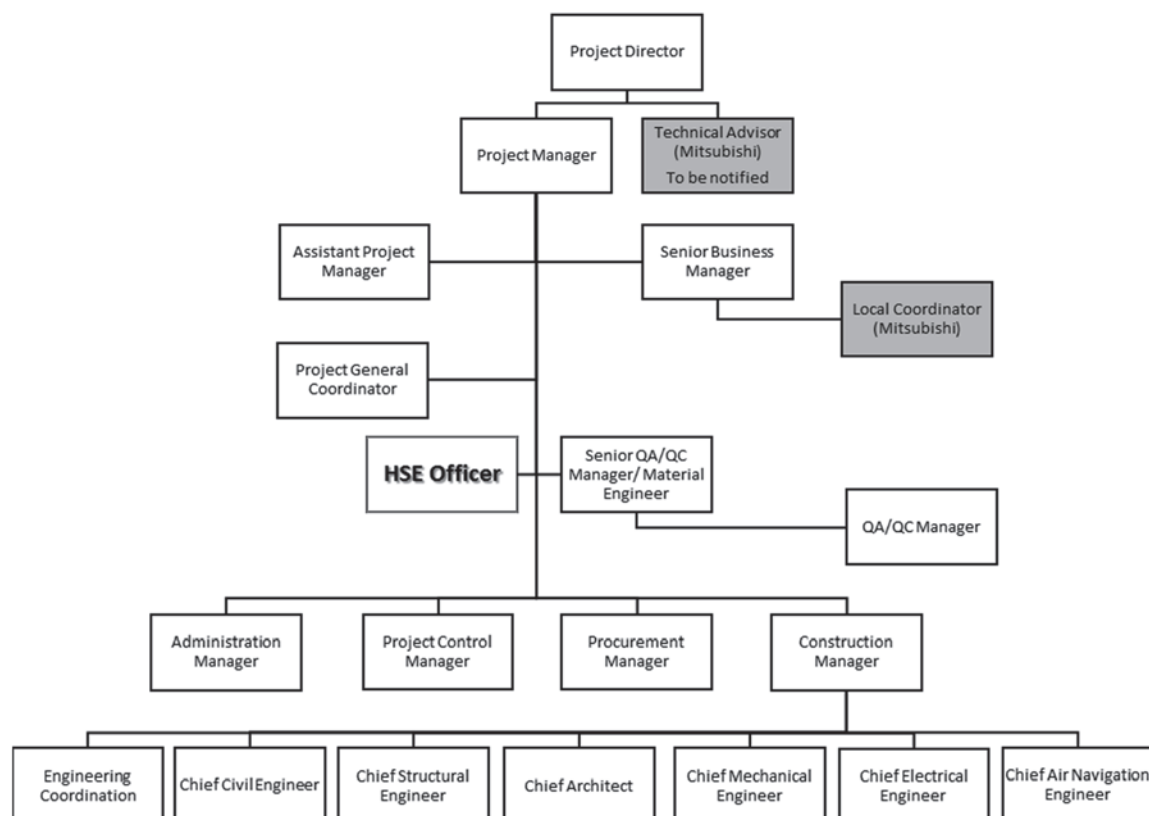
#### 3.5.2.1 Safety Management Organization of the Contractor

The organization chart of the Contractor is shown in Figure 3-3. Only major staff are shown in the same figure.

EEI Corporation (EEI, CMJV Subcontractor) provides staff related to Safety Management, such as HSE<sup>13</sup> Officer, Safety Officer and First Aider. CMJV refers to this as a “Consolidated Organization”.

It does not mean that CMJV lets EEI handle Safety Management; EEI provides all safety staff including the HSE Officer. The Project Manager of CMJV plays a role as a Focal Point, including Safety Management activities.

CMJV assigns seven Safety Officers on site, even though Rule 1033, as amended by DOLE-D.O. 16-01 of 2001, stipulates a minimum of two Safety Officers if there are fewer than 500 workers in total.



**Figure 3-3 Project Organization Chart of CMJV**

Source: CMJV, modified by Study Team

<sup>13</sup> HSE: Health, Safety and Environment

### 3.5.2.2 Safety Policy and Safety Management System

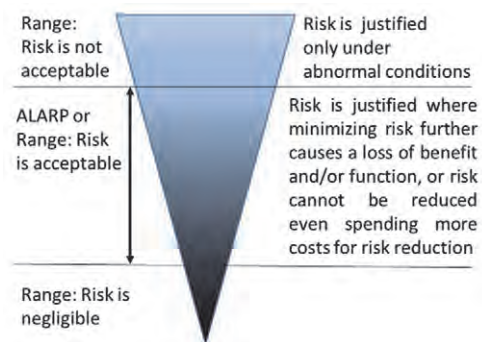
The major points in the CMJV Safety, Quality and Environmental Policy dated May 11, 2015 in CSHP are shown in Table 3-5. The Policy was ended as “Every Incident is Preventable”.

**Table 3-5 CMJV’s SQE (Safety, Quality and Environmental) POLICY**

1. Recognize each individual person has duty and responsibility to promote SQE activities and enhance SQE awareness, knowledge and competence through continual education and training.
2. Provide high quality products and services which meet the requirements of customers and society related to Health, Safety and Environment (HSE) by utilizing CMJV’s technologies and engineering capabilities for facilities and equipment for customers or to CMJV.
3. Minimize SQE risks, including injuries and occupational disease during the planning, design, procurement and construction and through the lifetime of a project, to a level As Low As Reasonably Possible (ALARP) by identifying every potential hazard and implementing proper controls.
4. Optimize the usage of natural resources and energy, reduce effluent and waste produced and recover usable material to achieve a low-carbon society through carbon management, including research and development of technologies to prevent or to resolve environmental problems; and transfer and spread such technologies globally.
5. Comply with relevant SQE legislation and regulations, and with such other requirements to which CMJV subscribes.
6. Ensure the continual improvements of SQE management systems.

### **ALARP, As Low As Reasonably Possible**

Project risk is categorized in three ranges. The first range is a scope where risk is unacceptable. The second range is a scope where risk is acceptable but must be minimized. The third range is a scope where risk is acceptable. The second range is called ALARP, where efforts should be made to minimize risk as far as reasonably possible. A limit will be set under conditions where minimizing risk is not reasonable. Under such circumstances, further minimizing risk would result in a loss of benefit and/or function, or risk cannot be reduced further, even if spending more on risk reduction.



(Source: Safety Science in Plant Engineer Jul. 2010, Dr. Masao Mukaidono, modified by the Study Team)

The Corporate Safety, Health and Environment & Security (SHE&S) Policy of EEI is shown in Table 3-6.

**Table 3-6 SHE&S Policy of EEI**

Fatal Accidents: Zero	LTI: Zero	Restricted Work: Zero
-----------------------	-----------	-----------------------

Fatal accidents: zero. LTI (Lost Time Injury, absence from work of more than one day): zero. In addition, Restricted Work: zero is also their objective. Restricted Work means that an injured person may transfer to work involving light duties instead of recording an absence from work, or may not transfer to other duties, but may have their workload eased. The SHE&S Policy ended “Everybody goes home safely”.

The Management Systems for this project are based on those of EEI, which were certified by the certification authorities. CMJV has reviewed and modified each system if necessary and applied the following systems in this Project:

- Occupational Safety and Health Management System:  
OHSAS 18001: 2007 Occupational Health and Safety Management System-Requirements
- Environmental Management System:  
ISO 14001: 2004 Environmental Management System-Requirements with guidance to use
- Quality Management System:  
ISO 9001:2008 Quality Management System-Requirements

**OHSAS 18001**, Occupational Health and Safety Assessment Series

OHSAS 18001 is an International Standard for Occupational Health and Safety Management System (OHSMS), which was developed by the British Standards Institution based on BS 8800. As a standard for OHSMS, OHSAS 18001 is the most popular worldwide. From a Safety and Health perspective, management is to be implemented based on a policy of taking actions pre-emptively and manage risk to achieve the following objectives:

- Create the best possible working conditions throughout the organization
- Reduce workplace accidents and illness to cut related costs and downtime
- Engage and motivate staff with better, and safer working conditions
- Demonstrate compliance to customers and suppliers

Since OHSAS 18001 employs virtually the same structure as ISO 9001 and ISO 14001, individual management systems can be integrated into a single system, which can then be configured to suit the objectives and program of whole organization. (Integrated Approach)

There is a delay in developing the ISO Management System for OHS. OHSAS 18001 can be migrated to ISO 45001 when published. ISO 45001 will be published within 2017.

### 3.5.2.3 Compliance Status for Laws and Regulations

The CMJV submitted CSHP to the DOLE Regional Office in accordance with the DOLE-DO13 provision and CMJV is carrying out Safety Management as per CSHP. The lists of license holders and checklists of construction equipment were strictly controlled and managed.

### 3.5.2.4 Typical daily working cycle

**Table 3-7 Typical Daily Working Cycle**

Table 3-7 shows a daily working cycle of CMJV. Starting with prayers and exercise at 6:40 and 16:00 marking the end of the day. Activities such as morning exercise indicated in Table 3-7 were not instructed by CMJV, it was a typical EEI working cycle. They had learned and incorporated morning assembly and exercise when

Time	Activities
6:40	Pray
	EEI Quality Policy reading by all workers and staff in local language
	Exercise led by a team nominated
	Tool Box Meeting-whole in local language
7:00	Tool Box Meeting-individual team
~ 11:30	Working in the morning
~ 13:00	Rest
13:00~16:00	Working in the afternoon

subcontracting works under Japanese contractors. This was a good example of effectively leveraging a Japanese culture of safety.



**Figure 3-4 Morning Assembly and Toolbox Meeting**

### 3.5.2.5 Correction Procedure On-Site

The following provision is included in Sub-Clause 6.7 Health and Safety of MDB 2010:

*The Contractor shall appoint an accident prevention officer at the Site, responsible for maintaining safety and protection against accidents. This person shall be qualified for this responsibility and shall have the authority to issue instructions and take protective measures to prevent accidents. Throughout the execution of the Works, the Contractor shall provide whatever is required by this person to exercise this responsibility and authority.*



It is understood that CMJV satisfied a requirement under Sub-Clause 6.7 of MDB 2010 by assigning the authority with respect to Safety Management by PM of CMJV to an HSE Officer; an accident prevention officer under the same Sub-Clause and by a commitment for safety made by the EEI President.

**Culture of Safety**



**EEI Stop Work Policy**  
All employees have the right, without fear of reprimand or retaliation, to stop work if seen as a clear and present danger.

**Figure 3-5 EEI Stop Work Policy**

Source: Presentation by the president of EEI, Bulletin Board is a sample from another site

As indicated in Figure 3-5, the EEI made a declarative statement (EEI Stop Work Policy), whereby all employees, including HSE Officer and Safety Officers, have the right, without fear of reprimand or retaliation, to stop work if a clear and present danger is seen. “Stop Work” by an employee has not been occurred yet, since corrections were made systematically before he/she stopped work.

Safety officers wear red helmets and red jackets for easy on-site identification. (refer to Figure 3-6). The following systems are established and effectively implemented on site:

- One Safety Officer with a prominent red uniform remains on site where construction activities are being carried out.
- When someone points out unsafe activities or hazards, they are corrected immediately; directed by the Safety Officer.

JAC staff can issue a site instruction to resolve defects and/or unsafe activities at the time of the on-site inspection by the Employer and Engineer. However, because the above system functions, the issue of paper site instruction for safety matters has not been issued to date in this Project.



**Figure 3-6 Uniform of Safety Officer**

Similarly, a Non-Conformity Report (NCR) can be issued by the Employer/Engineer/Contractor/Subcontractor under a Management System whenever a non-conforming situation is identified on site. Once an NCR is issued, corrections of such non-conformity in works are to be made. If the non-conformity is serious, the (root) cause of the non-conformity should be investigated and it should be removed under procedures set forth in the Management System. No NCR had been issued as of the end of November 2016. It is the same situation as that of the site instruction. In future, various construction activities commence, whereby a non-conformity requiring corrections may occur with respect to the Safety, Quality and Environment aspect. This is one of the tools of the PDCA cycle. Accordingly, it is important for all parties involved to utilize NCRs if necessary.

## **NCR, Non-Conformity Reports**

Non-conformity Reports are issued when an ISO management system is audited and where applying the ISO management system is part of the contract, in which case NCRs are issued occasionally during the construction period. NCRs can cover not only non-conformities of the management system but also non-conformities involving safety, quality and the environment. NCRs should be prepared based on objective evidence. NCRs are to be issued to investigate the (root) cause and remove it to prevent any recurrence of such non-conformity, consequently improving the management system. This is the basic principle for issuing NCRs.

### 3.5.2.6 Items to be Recommended for Improvement

It was agreed in the regular Weekly Progress Meeting with DOTr/JAC/CMJV held in the JAC temporary office that a Joint Safety Inspection would be carried out when works progressed. The Study Team was advised that it would commence in November 2016. However, no Joint Safety Inspection was yet carried out for various reasons. To promote Safety Awareness on Site, it is preferable to execute a Joint Safety Inspection with DOTr/JAC/CMJV.

Based on the typical daily working cycle of this report, it emerged that a Daily Safety Interface Meeting, which is normally carried out in construction sites in Japan, had not been held. A discussion ensued with the PM and HSE Officer of CMJV. They have the understanding that because the workplace is not in the vicinity and given the small number of subcontractors, an interface management can be made via a bi-monthly Safety Committee meeting. However as shown in the Recommendation, this is to be improved.

The Study Team observed some activities which may be pointed out as unsafe activities in Japan compared with the safety standard at similar work sites in Japan. It is recommended that the following two site activities be improved, as identified by the Study Team during the site inspection; referencing the JICA Guidance:

- i. At the foundation in the passenger terminal: Measures to prevent workers falling were not taken around excavated areas for independent footings.
- ii. At the stock yard of drain concrete pipes: A backhoe was used as a lifting device like a crane.

### 3.6 Accident Statistics

LTIR (Lost Time Injury Rate) is shown in Table 3-9 based on the figures included in Clause 2 Health, Safety and Environment of the Monthly Progress Report as of the end of October 2016.

**Table 3-8 Cumulative Working Hours**

Period	CMJV	Subcontractor (EEI)	Total
Cumulative Total till the end of previous month	157,201	1,013,160	1,170,361
This month (October 2016)	12,771	111,055	123,826
Cumulative Total till previous month	169,972	1,124,215	1,294,187

**Table 3-9 Number of Accidents<sup>14</sup> etc.**

Period	Cumulative Working Hours	Number of Fatalities	LTI: Number of Injury, absence from work of at least one day	LTIR Frequency Rate of LTI	Number of TRI <sup>※</sup> (Total Recordable Injury)	TRIR <sup>※</sup> Frequency Rate of TRI
	Man-hours	No.	No.	No./200,000	No.	No./200,000
This Month	123,826	0	0	0	0	0
Total	1,294,187	0	0	0	0	0
Breakdown as of October 31, 2016						
Number of Incident Report			8	Lost time due to accident		0
Non-Conformity Report (NCR)			0	Blood Alcohol Content Positive		0
First Aid			10			

※TRIR: Total Recordable Injury Rate: Frequency rate in OSHA in United States. It is an index for frequency of occupational accident which is calculated as number of occupational accidents including injuries not absence from work, but excluding First aid injury divided by 200,000 working hours.

As of the end of October 2016, the total working hours were 1,294,187 and LTIR was zero.

As a reference, the Accident Frequency Rate<sup>15</sup> (AFR) in Japan is shown in Table 3-10. Because AFR is calculated for one million working hours, a simple calculation is made to obtain the corresponding number of LTI, using AFR=0.92 for General Contractors in Year 2015. The result is approx. 1.2.

$$1,294,187 \text{ hours} / 1,000,000 \text{ hours} \times 0.92 = 1.19$$

Result obtained in the Project is acceptable compared to statistics in Japan.

**Table 3-10 Accident Frequency Rate in Japan**  
(absence from work of at least one day)

	Year-2014	Year-2015
General Contractor	0.91	0.92
Breakdown		
Civil	0.88	1.37
Architecture	0.92	0.85

Source: Table-3 at outline of result "Investigation of Occupational disaster trend" press released by the Ministry of Health, Labor and Welfare in 2015

<sup>14</sup> Accidents and occupationally injuries are collectively called as "Accidents" in this Report. In Japan, occupational injuries mean injury, disease, interference and death during work time and those during commuting hours, the former called as occupational injuries and the latter called commuting injuries.

<sup>15</sup> Accident Frequency Rate=total number of accidents/total number of man-hour worked×1,000,000

## Chapter 4 Observation During Safety Review on Site

### 4.1 Induction Training

The educational material for site induction training implemented by CMJV is prepared by the Safety department of EEI Head office and resembles comprehensive content; covering all aspects of occupational safety in the construction industry. Contents such as the full-harness-type safety belt with two hooks are also comprehensive and almost cover those of the JICA Guidance. A person who passes a test after the lecture using this educational material (Power Point presentation) is authorized to enter the site. Those failing to pass the test should take makeup tests until passing. Since the educational training material prepared by EEI Head office is generic, it is suggested that the material be incorporated with specific hazards, attentions and particular unique rules such as how to identify a Safety Officer for the New Bohol Airport Project.

### 4.2 Identification of the Safety Officer

An eye-catching Safety Officer uniform such as a red helmet and jacket (refer to Figure 3-6) is quite effective for all staff and workers to recognize their presence and function on site.

### 4.3 Permit to Work (PTW) System

Sometimes workers on site did not apply the method detailed in a method statement prepared by the Contractor's engineer and approved by the Engineer. This is because the workers did not understand the method concerned or site work got underway without briefing a method statement. PTW is a system adopted by CMJV and an interface document between the method statement approved by the Engineer and a document used on site to guarantee the assured execution of works. The procedure is shown in Figure 4-1.

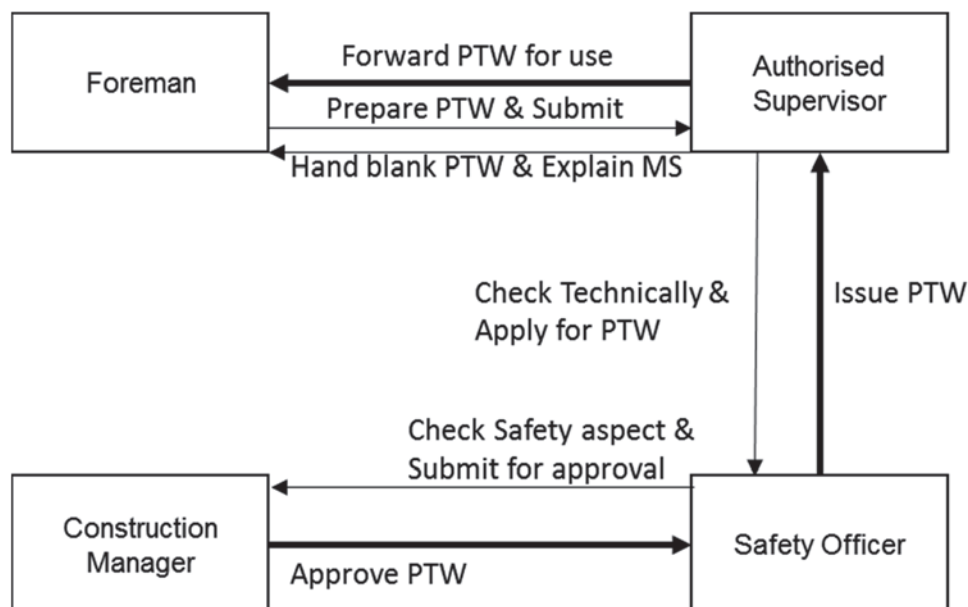


Figure 4-1 PTW Procedure

The PTW system has the advantage of reconfirming the method statement before the works are executed and the CMJV Construction Manager recognizes the commencement time of the works. CMJV applies the PTW system to each of the construction activities, such as Re-bar, Formwork and Concrete Works. The adoption of the PTW system is considered one of the reasons for Zero Accidents.

#### 4.4 Risk Assessment

The Job Hazard Risk Assessment (JHRA) detailed in CSHP is applied as Risk Assessment on site. JHRA is a popular method combining Job Hazard Analysis and Risk Assessment (Analysis). Each job is divided into steps, whereupon the hazard of each step is identified and a risk evaluation made. According to the result of the risk evaluation, existing or new countermeasures can then be selected and taken.

PC Software made by EEI Head office was provided and once the Hazard ID and other necessary variables had been given, the result (R: result of risk evaluation, standard Risk Control Measure) emerges automatically.

R: Result of risk evaluation=

Probability Score (Likelihood score × Adjustment factor) × Severity of consequences score

**Table 4-1 Standard Risk Control Measures**

R: Result of risk evaluation	Standard Risk Control Measures
2	Conduct Pre-task orientation prior to execution, Provision of Safety Signage, USE of PPE
3	Conduct Pre-task orientation prior to execution, provision of Barricades, Provision of Safety Signage, USE of PPE
4	Conduct Pre-task orientation prior to execution, Provision of Safety Signage
6	Conduct Pre-task orientation prior to execution, USE of PPE, Inspection of Tools/Equipment

The result of risk evaluation for works currently executed is less than 20. Accordingly, the Risk Level is CLEAR - Acceptable Risk in the lowest and the Minimum Controls are indicated in Table 4-2.

**Table 4-2 Management Plan based on the Risk Level**

RISK LEVEL	MINIMUM CONTROLS
<b>CLEAR</b> <i>Acceptable Risk</i> (R < 20)	<b>Risk is negligible</b> , hence: <ul style="list-style-type: none"> <li>Existing controls shall be maintained. No additional control or action is required except compliance to applicable legal &amp; other requirements including use of PPE if applicable.</li> </ul>
<b>BLUE</b> <i>Low/ Relatively Acceptable Risk</i> (20 ≤ R < 50)	<b>Risk is low.</b> Efforts shall be made to reduce risk in accordance with the prescribed hierarchy of controls which include among others the following: <ul style="list-style-type: none"> <li>Compliance to applicable legal and other requirements including use of PPE if applicable</li> <li>Identification and monitoring and measurement of relevant OSH parameters</li> </ul>

There would be no problem to date. However, site conditions differ from site to site and it is recommended to add actions which reflect the on-site conditions.

#### 4.5 **Analysis of Accident Cause**

It is confirmed that the method of analyzing the accident cause is precisely described in the Safety Manual (three volumes) made by EEI. The procedure is as follows:

- Firstly, identify the immediate cause.
- Secondly, identify the root cause, whether the immediate cause came from the non-conformity or failure of the SHE&S system used in this Project.

The abovementioned procedure to analyze accident cause is almost the same as the procedure to investigate the root cause used in the ISO Management System. In the absence of any specific accidents, however, there were no examples of accident analysis, simply confirmation of procedures.

## Chapter 5 Safety Seminar

On November 15, 2016, at a hall of the Panglao Regents Park Hotel nearby the site in Panglao Island, a seminar was held, during which Safety Management in Japan, the Introduction of JICA Guidance and an Outline of Study Results were presented. At the beginning of the seminar, the Study Team explained the study background, whereby the Safety Review study was initiated following a serious accident at Can Tho Bridge in Vietnam in September 2007 and 13 projects in nine countries were reviewed from 2009 to 2015. The Study Team introduced and distributed a JICA Safety Policy made publicly available in March 2015 to all attendees as handout material at the seminar.

### 5.1 Attendance

A total of 32 persons, including the DOTr (the Employer) and JAC (the Engineer), CMJV (the Contractor), EEI (the Subcontractor) and Bohol Provincial Government attended.

**Table 5-1 Breakdown of Attendees**

	DOTr	JAC	CMJV	EEI	Bohol Provincial Government
Number	5	7	10	5	5
Position	PM, Engineer etc.	2 Japanese including PM	6 Japanese including PD, PM	SHE Manager	

### 5.2 Contents of the Seminar

The seminar schedule is shown in Table 5-2 and was implemented as scheduled.

**Table 5-2 Seminar Schedule**

Time	Item	Person in charge
13:30	Opening/reception	Study Team
13:55	Radio gymnastic exercises No.1, live performance	All attendee
14:00	Opening speech	DOTr PM
14:05	Background of safety review, Section 1 History of Accidents prevention in construction industry in Japan	Study Team Leader
14:30	Section 2 JICA ODA Introduction of JICA Safety Policy and JICA Guidance Introduction of Hazard Prediction Training	
15:00	Break	
15:10	Section 3 Outline of Study Result	Study Team Leader
15:30	Q&A	Study Team
15:55	Closing speech	DOTr Eng.III
16:00	Closing	

The seminar included the following three sections:

Section 1: History of accident-prevention in the construction industry in Japan

Section 2: Introduction of JICA Safety Policy, JICA Guidance and Hazard Prediction Training

Section 3: Outline of Study Results, Observations and Recommendations

A copy of the seminar slides is attached in Appendix-4.

#### 5.2.1 Section 1: History of Accident-prevention in the Construction Industry in Japan

The first section is a history of accident-prevention in the construction industry in Japan, in which safety was initially imposed by law and penalty-driven and later transformed to self-discipline by stakeholders and a culture of safety-driven as the society in Japan matured.

##### 5.2.1.1 Occurrence Record of Occupational Injuries Graph Showing Fatalities and Casualities, Absences from Work of at least 4 days for All Industries and the Construction Industry)

There were 972 fatalities for all industries in 2015, which is the first time that fewer than 1000 fatalities were recorded since statistics started in 1953. Over a decade or so since enacting the Industrial Safety and Health Act in 1972, the number of fatalities and casualties declined significantly for all industries and the Construction Industry.

##### 5.2.1.2 Ministries Responsible for Construction Safety

The role of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), which corresponds to DPWH and the Ministry of Health, Labor and Welfare (MHLW), which corresponds to DOLE, were introduced.

##### 5.2.1.3 The 12th Occupational Injury Prevention Program 5-year Program from 2013 to 2017)

Since 1958, the Minister of the Ministry Responsible for Safety has established an accident-prevention program. The 12th Program includes the following:

- The target for reducing fatalities in the construction industry is 20% compared to the figures in Fiscal Year 2012, whereas the figure for all Industries is 15%.
- One of the Priority Measures is to prevent falling accidents and issue a Recommendation for a harness-type safety belt.
- Another is to request that an Employer estimate the adequate costs for safety management, include them in the contract and pay the relevant Contractor.

##### 5.2.1.4 Framework for Construction Safety and Health

The framework comprises legal restraints under the Industrial Safety and Health Act enacted in 1972; its Order, Ordinance and workplace inspection by the Labor Standards Inspection Bureau and suspension of qualification of contractors involved in serious occupational accidents.

##### 5.2.1.5 Typical Daily Construction Cycle

The typical Daily Construction Cycle in Japan was introduced, namely radio exercises, morning



gathering, Toolbox Meeting, Hazard Prediction Training, Pre-start check, walkthrough by the PM, Daily Safety Interface Meeting (DSIM), Site Clean-up etc. The DSIM is a statutory requirement in Japan. During the Safety Review on Site, it emerged that the DSIM was not being held, whereupon an example was introduced.

#### 5.2.1.6 Objectives of DSIM

The Main Contractor chairs DSIM and the main objective is to co-ordinate and manage interfaces between subcontractors and works. Feedback from the walkthrough by the PM and instructions concerning Safety/Quality/Environment from the staff in charge are also to be made.

#### 5.2.1.7 How to Carry Out DSIM

Details are given in 6.2.1 as a Recommendation.

#### 5.2.1.8 An Example Record of DSIM

Details are given in 6.2.1 as a Recommendation.

#### 5.2.1.9 Safety Management System in Japan

In 1999, OHSAS 18001 was established in England. At around the same time, MHLW in Japan established Guidelines on the Occupational Safety and Health Management System (OSHMS). Based on these guidelines, the Japan Construction Safety and Health Association (JCOSHA) made Guidelines on the Construction Occupational Health and Safety Management System (COHSMS). In 2006, the Industrial Safety and Health Act was amended to include a Risk Assessment as a “make efforts” obligation and the above guidelines were also amended.

### 5.2.2 Section 2: Introduction of JICA Safety Policy, Guidance and Hazard Prediction

JICA Safety Policy and JICA Guidance were introduced. Due to time constraints, the Study Team introduced a brief summary of JICA Guidance.

#### 5.2.2.1 Introduction of JICA Web, Safety for Construction Works in Japanese ODA Projects

The JICA web, including a download link to the JICA Safety Policy and JICA Guidance, was introduced.

#### 5.2.2.2 JICA Safety Policy (1) and (2)

The Basic Concept and Basic Policy (1) Promoting Safety First and (2) Promoting the Japanese Safety Culture were explained.

#### 5.2.2.3 JICA Guidance Chapter 1 General Rules

Chapter 1 Comparison of Safety Plan and Method Statement on Safety

Chapter 2 Basic Safety Management Policies,

Chapter 3 Contents of the “Safety Plan”

Chapter 4 Contents of the “Method Statement on Safety”

Chapter 5 Technical Guidance for Safe Execution (by the Type of Work)

Chapter 6 Technical Guidance for Safe Execution (by the Type of Accidents)

During the Safety Review on Site, it was observed that no Hazard Prediction Training was recognized, whereupon an example was introduced.

#### 5.2.2.4 Hazard Prediction Training: Case 10, Road Compaction Work at Night Under Poor Lighting Case 21, Concreting at elevation using a concrete hose

Extraction of Hazards

Countermeasures against Hazards extracted

Hazard Prediction Training Procedures

- The Group Leader (GL) explains the procedures and safety precautions of today’s work to the co-workers in the group.
- The GL notifies the start of Hazard Prediction Training, whereupon each co-worker considers and advises the GL of hazards he/she can imagine. The GL then writes the hazards specified on a whiteboard.
- The members and GL discuss and identify the most dangerous hazards from those listed on the whiteboard and the GL then makes the final decision.
- Related mitigation or elimination measures are discussed. Among the measures discussed, GL selects the most effective measure and writes it on the whiteboard. All group members then point to it and read it out loud.

#### 5.2.3 Section 3: Outline of Study Results

After a short break, Section 3 was presented; the contents of which are described in Chapter 3, Chapter 4 and Chapter 6 of this report.

The PM and Engineer III of DOTr kindly agreed to the Study Team’s request for the opening address by PM and closing address by Engineer III. They thoroughly read through the seminar article provided and explained by the Study Team on November 14, 2016 and incorporated it into their speeches. The Study Team was impressed at their passion and awareness of safety. The PM was particularly concerned about the occurrence of public or third party accidents, because of the community road traversing the construction site.



**Figure 5-1 Seminar Audience**

5.2.4 Q and A in the Seminar

**Table 5-3 Q and A in the Seminar**

Question	Answer
In many countries, harness-type safety belt is used. However, in Japan, why single belt type is still used?	In Japan, currently, harness-type safety belt is being used for construction sites for high-rise building and steel structure works which include work in high place. Study Team could not find reasons of it. In Japan, judging from the fact that 12th Accident-Prevention Program includes recommendation for using harness-type safety belt, a single belt will be changed to harness-type, gradually.
In recommendation of Study Team, proper equipment, not a backhoe which is not classified as lifting equipment, will be used for lifting works. How about, when a backhoe has a hanging attachment(hook) with latch welded on the back of a bucket?	That is acceptable in Japanese safety regulation. However, it might affect the ability of a backhoe as excavation equipment for activities which uses the back of a bucket, i.e. levelling etc.
What was the causes of the accident of Can Tho Bridge in 2007?	In an article of newspaper, it was mentioned that the cause of collapse slab casted was unforeseen differential settlement of the foundation of false supporting casted concrete load. A report issued by the National Committee for the accident investigation was only compiled in Vietnamese.
How do you think of Safety Laws and Regulations of the countries in South East Asia?	Legislations for construction safety of South East Asia countries have nearly the same as or equivalent to those of Japan. However, issues would exist an actual application of those on site.
How does JICA share information of Accidents inside/outside JICA?	JICA shared all Accidents information inside JICA. With respect to Accidents occurred in Grant Aid Projects, information is sent by JICA Headquarter using accident information sheet to Japanese consultants and contractors involved in Grant Aid Projects.

### 5.2.5 Issue of Certificate

The Project Manager of DOTr requested that the Study Team issue a certificate for attendees during the seminar. The Study Team got permission from the JICA Philippines Office and then issued and distributed Certificates of Appearance shown in Figure 5-2 in the joint name of DOTr and the Study Team with the assistance of CMJV.



**Figure 5-2 Certificate of Appearance**

## Chapter 6 Recommendations

### 6.1 Recommendations to DOTr/JAC/CMJV

#### 6.1.1 Joint Safety Inspection

It is recommended to carry out a Joint Safety Inspection by DOTr/JAC/CMJV; an execution of which was agreed in the Weekly Progress Meeting. Based on the results of past safety review studies, to ensure the safety of the Project, it is important that the Employer have high safety awareness. The opening and closing address at the seminar made by DOTr revealed significant concerns of DOTr over safety. As a first step, an agreed Joint Safety Inspection is to be carried out and it is recommended to request that the DOTr participate in major Safety Management activities. (The Employer/Engineer/Contractor/Subcontractor form a team and pursue completion of the Project without any accident or occupational injury. This Japanese-style Safety Management is considered as one of the components of the Japanese culture of safety.)

### 6.2 Recommendation to the Contractor (CMJV)

#### 6.2.1 Daily Safety Interface Meeting (DSIM)

It is recommended to have a DSIM at the designated time, place and attendee for liaisons and coordination between related works. Although, such meetings should preferably be held daily, the frequency will be decided based on the site condition. Because significant material and machinery will be transported on site and the subcontractors involved in site works will be increased from now, it is advisable to have safety instructions etc. documented in the meeting record of DSIM, obtain signatures of attendee and finally distribute a copy of the meeting record to all attendees.

In Japan, as a measure to be taken by the Main Contractor, the following provisions are specified in Article 30 of the Industrial Safety and Health Act and Article 636 Liaison and Coordination Between Related Works of Ordinance on Industrial Safety and Health.

#### **Industrial Safety and Health Act**

(Measures to be taken by the main contractor in specified industries※)

Article 30 The main contractor shall take the following necessary measures, in order to prevent occupational injuries that may arise due to works being carried out at the same site by his workers and those of related contractors:

1. Establish and manage a consultative organization
2. Liaise and coordinate between related works
3. Conduct inspection walkthroughs at the work site

• • • continued ※ Specified Industries are Construction Industry and Shipbuilding Industry.

#### **Ordinance on Industrial Safety and Health**

(Liaison and Coordination between Related Works)

Article 636 Regarding the liaison and coordination between related works set forth in item 2. of Article 30 of the Act, the main contractor shall ensure that liaison and coordination are effected as needed between the main contractor and related contractors and among the related contractors themselves.

Based on the provisions stated in the previous page, to ensure liaisons, coordination and interface management among construction activities, among subcontractors (related contractors) and reconfirm works procedures, DSIM is held by the Main Contractor and a record of the meeting is kept as a DSIM record.

Holding DSIM and keeping DSIM records has the following benefits:

- Preventing accidents/abortive works due to a lack of or insufficient coordination, interface management and communication.
- Increased level of communication by face-to-face meetings.
- Understanding of scheduled works and their progress.
- Understanding of the allocation of manpower and material/machinery, including transportation.
- Comparison of Schedule vs. Actual (schedule was written on the previous day and actual is written for the current day).

A sample of the DSIM record is shown in Table 6-1.

**Table 6-1 Sample of DSIM record**

Actual Working Record			Schedule for DD, MM, YY			Sign	PM	staff	Sub con
Sub contractor	Activities	Work description, resource allocation (equipment and manpower)	Sub contractor	Activities	Work description, resource allocation (equipment and manpower)	Safety Instruction or precautions			
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;">Written in the current day</div>			<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;">Written in the previous day</div>						
Directions by PM			Meeting Decision, Material Delivery, Testing Schedule etc.			AOB			
						Quality Control Record			
						Inspection/Test Items	Result of Inspection/Test	Persission to Proceed	
<div style="border: 1px solid black; padding: 5px; margin-top: 10px;">Resource Record Equipment and manpower Today and accumulated working hours</div>									

6.2.2 Prevention of Falling Accidents Around Excavation Area for Footings of PTB  
Sub-Clause 6.1.2.2 (8) Openings of JICA Guidance specifies the following requirement:

*Where there are openings on the working area, install adequate handrails or fencing around it with sufficient signs and notifications at or near the opening. On non-working days, those openings shall be closed or covered to prevent any falls.*

The above Sub-Clause of JICA Guidance is not directly applied to the excavation area for independent footings foundation. Because similar accidents might occur in this case, the above provision is deemed applicable.



**Figure 6-1 Excavation areas for independent footings of PTB**

Excavation areas for independent footings of the Passenger Terminal Building (PTB) are closed off as No-Entry area using barriers made of single tube pipes. However, each excavation area still includes a risk of workers working around independent footings falling down. Although JICA Guidance is not applied to the Project, it is recommended that the following actions be taken to eliminate or mitigate falling accidents:

- Install adequate handrails or fencings around openings at the excavation area for each independent footing foundation, or

- Because handrails or fences are adequately installed for the areas for the group of independent footing foundations, safety walkways for workers should be designated and clearly indicated on site by some means and there should be a ban on using any routes other than the designated safety walkways.

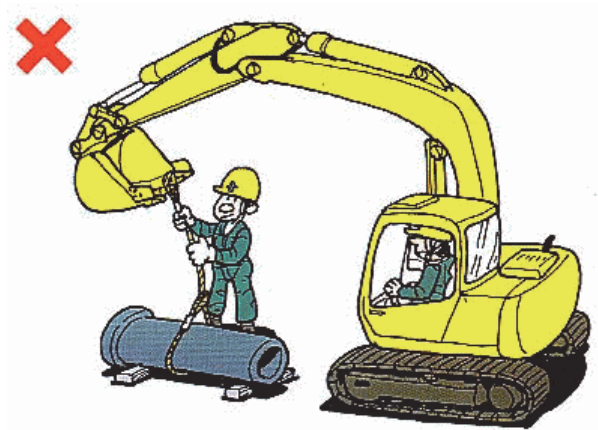
### 6.2.3 Unintended Use of a Backhoe for Unloading Concrete Pipes

A backhoe was used as part of lifting equipment to unload concrete pipes from a lorry, given the lack of any clause in the Philippine regulations directly prohibiting such use.

Sub-Clause 5.1.2.4(7) prohibition of unintended use of machinery of JICA Guidance specifies the following requirement:

*Excavation machines shall strictly be used within the scope of safe use only and only as intended.*

Therefore, it is recommended to agree a ban on the unintended use of all excavation machines, not only backhoes and ensure proper lifting equipment is used for lifting operations.



**Figure 6-2 Unintended Use of a Backhoe<sup>16</sup>**

<sup>16</sup> Source: Web of Yamagata Pref. Branch of Japan Construction Safety and Health Association  
<http://www.kensaibou-yamagata.jp/koushu/25/25-04-syaryoukeisaikyoku.html> in Japanese



## Appendices

Appendix-1 : Safety Policy for Construction Works in Japanese ODA Projects.....App-1

Appendix-2 : Hearing memo

2-1: DOLE-OSHC: .....App-3

Occupational Safety and Health Center, Department of Labor and Employment

2-2: EEI Corporation, Head Office .....App-6

2-3: SOPI: Safety Organization of Philippines Inc. ....App-8

Appendix-3 : Site Organization Chart

3-1: Department of Transportation, Project Management Office.....App-10

3-2: Japan Airport Consultants Inc. ....App-11

3-3: Chiyoda Corporation and Mitsubishi Corporation JV (CMJV).....App-12

Appendix-4 : Seminar Slides.....App-13

4-1: Section 1: .....App-14

History of Accidents prevention in construction industry in Japan

4-2: Section 2: .....App-17

Introduction of JICA Safety Policy, JICA Guidance and Hazard Prediction Training

4-3: Section 3: .....App-21

Outline of Study Results, Observations and Recommendations

## **Appendix-1**

### Safety Policy for Construction Works in Japanese ODA Projects

#### 1. Basic Concept

The highest priority must be placed on ensuring safety and protecting human life in construction works of Japanese ODA projects. As an organization that supports economic and, social development in developing countries, Japan International Cooperation Agency (hereinafter referred to as JICA) is expected to ensure high safety standards on its construction sites. JICA is determined to improve prevention measures and reduce occupational accidents, with the aim of eventually eradicating all preventable accidents.

JICA recognizes its role in disseminating "the Japanese culture of safety" to all organizations and individuals engaged in Japanese ODA construction projects.

#### 2. Basic Policy

##### (1) Promoting the highest priority on safety for all construction works

JICA will further promote maximum safety measures for prevention of occupational accidents. This will ensure that all parties in construction works prioritize safety and protecting human life, in compliance with the following basic policy for safety management.

#### **Basic Policy for safety management**

- Full implementation of measures to eliminate causes of accidents
- Full implementation of measures to prevent accidents
- Compliance with the related rules and regulation applied to Japanese ODA projects
- Full implementation of measures to prevent public accidents
- Full implementation of PDCA (Plan, Do, Check, Act) cycle of safety management
- Information sharing with all parties
- Ensuring participation of all relevant parties in construction safety measures

In order to ensure safety in construction works, JICA formulated "The Guidance for the Management of Safety for Construction Works in Japanese ODA Projects." JICA is determined to improve the implementation of safety measures in compliance with the Guidance. JICA is also determined to promote the full implementation of safety measures through site visits by JICA experts and missions.

(2) Promoting "the Japanese culture of safety"

JICA will promote the dissemination of our experience in construction safety, which can be branded as "the Japanese culture of safety" in cooperation with employers, consultants and contractors.

- JICA will promote efforts to establish mechanisms of self-sustained and proactive occupational safety measures in relevant organizations, such as executing agencies, and will raise awareness on safety measures in developing countries.
- JICA will promote understanding among all parties in developing countries on the importance of prioritizing safety and protecting human life. We will also stress the need to invest in adequate safety management measures and highlight that by conducting appropriate safety management, efficiency, productivity and quality can be enhanced.

In order to disseminate "the Japanese culture of safety," JICA will support developing countries' safety management capacity development through ODA projects, including construction works and technical cooperation.

The Safety Policy for Construction Works in Japanese ODA Projects will be communicated to all employees and personnel who work for or on the behalf of JICA. It will also be made available to the wider public.

30th March, 2015

*Original Signed by Mr. Akihiko TANAKA*

President

Japan International Cooperation Agency

**Appendix-2 Hearing memo**

2-1 DOLE-OSHC

Date/Time: 14:20-15:30 on November 7, 2016 Venue: Department of Labor and Employment (DOLE), Occupational Safety and Health Center (OSHC) Meeting Room
Attendees: Ms. Ma. Teresita S. Cucueco (Executive Director) Engr. Nelia G. Granadillos (Chief Environmental Control Division) Study Team: Mr. Mitani and Mr. Ikenaga
Subject: Construction Safety & Health
<ol style="list-style-type: none"><li>1. Bureau of Working Conditions (BWC) is policy maker and BWC is working for enforcement of "Occupational Safety and Health Standards"<sup>1</sup>, making training program and keeping database. OSHC supports BWC in training and dissemination.</li><li>2. OSHC is responsible for office works such as planning, trainings, work environment, PPE testing and dissemination (public relations). Site inspections are carried out by DOLE Regional Offices (DOLE ROs).</li><li>3. In January 2011, there was a fatal accident at a high-rise building project site in Makati where 10 workers died. After the accident, as per the President's direction, DOLE Secretary declared that all construction projects should be subject to DOLE's inspection.</li><li>4. Inspections of ongoing construction projects were in progress and a number of violations were found, such as no submission of Construction Safety &amp; Health Program (CSHP), no allocation of safety officer. After DOLE's approval of CSHP, a building permit will be issued by Office of Building Officials (OBO) in Local Government.</li><li>5. Each construction project is obliged to submit to DOLE a monthly accident report even there was no accident.</li><li>6. Department of Public Works and Highways (DPWH) proclaimed Department Order (D.O.) No. 56 in 2005, confirming the obligations and procedures to implement safety control in construction projects as per DOLE-DO13 in 1998. In DPWH D.O. No.56, emphasis was given on the methodology to be used in estimating the cost of construction safety and health program as required in Section 17 of DOLE-DO13.</li></ol>

<sup>1</sup> Amended in 1989 and thereafter, necessary amendments have been issued annually as DOLE Department Order (DO).

7. Though OSHC is conducting trainings on Construction Safety and Health, the OSHC capacity is limited and unable to satisfy the market demand. To cope with this situation, OSHC has accredited at least 33 external organizations to conduct trainings on DOLE's behalf to issue relevant certificates. After the big accident in 2011, the number of applicants for trainings increased rapidly. OSH Networks (OSHNETs) was formed in 2010 by Administrative Order 53 in 2010, which is a private organization under DOLE ROs and carried out OSH training as an accredited partner of DOLE-OSHC.

Also, Construction Safety and Health activities are being recognized as a part of Company's Social Responsibility (CSR).

8. Demarcation of tasks of 3 agencies against violations of Construction Safety and Health requirements is:

- DOLE: Inspection - Order to stop construction
- DTI (Department of Trade and Industry)<sup>2</sup>: Philippine Contractors Accreditation Board (PCAB) - Revoke the contractor's license
- DPWH: Building Permit - Rejection of Permit applications

In practice, OBO in Local Government is handling Building Permits. OBO is under supervision of DPWH.

9. Other certificates concerning Construction Safety and Health are:

- Periodical inspection of construction equipment - by DOLE accredited Construction Heavy Equipment Testing Organization<sup>3</sup>.
- Qualification of construction equipment operators - by Technical Education Skills and Development Authority (TESDA).

10. Biddings for construction projects include the following items related to construction safety management:

- Submission of Construction Safety and Health Program (CSHP)
- Budget allocation in BOQs---Refer to Item 6 above.

11. DOLE is conducting special trainings to DPWH staff. Approx.1,400 staffs were trained in this year and target is 3,000. Regarding DOTr basic safety trainings were made for DOTr

---

<sup>2</sup> What is a relation between CIAP (Construction Industry Authority in the Philippines) and DTI, Minister of which is the Chairman of the Board of CIAP.

<sup>3</sup> From Internet, TUV NORD, People 360 etc. are regarded as Construction Heavy Equipment Testing Organization

staff in Manila Airport and Mactan-Cebu Airport although no special trainings were made.

12. Safety is not compulsory legislative obligation but self-motivating proactive action. DOLE organizes safety and health awareness seminar to all workers. Refer to Section 12 of DOLE-DO13.
13. “Safety Culture” is being referred to in many occasions. However, honestly speaking, definition itself would be very wide and vague. It is necessary to study “Safety Culture” further and how to utilize it in actual construction sites.

\*\*\*end of memo\*\*\*

## 2-2: EEI Corporation

Time : from 14:40 to 16:20 on Friday, November 16, 2016 Venue : EEI Corporation Head Office, Quezon City, Manila
Attendee : EEI Corporation (EEI) Mr. Michael D. Arguelles, Assistant Vice President for SHES Mr. Reynan I. Del Rosario, Safety Engineer and other 2 staff of EEI Study Team : Mr. Mitani and Mr. Ikenaga
EEI's corporate challenge to ensure Safety
<ol style="list-style-type: none"><li>1. Mr. Michael has an experience for attending safety training course of Japan Industrial Safety and Health Association (JISHA) in Japan and he knew KYT (Kiken Yochi Training in Japanese, Hazard Prediction Training in English) etc. very well. (Because HSE Officer of New Bohol Airport Construction site did not know KYT, it seems that EEI does not introduce KYT as a company.)</li><li>2. EEI got certifications of the following Management Systems. At present, they are not Integrated and operate individually. EEI is the first Construction Company which obtains ISO 9001 certification. Quality management: ISO 9001: 2008 Environmental Management: ISO 14001: 2004 Health and Safety Management: OHSAS 18001: 2007 Regarding ISO 9001 and 14001, because 2015 versions have been issued, migrations to 2015 versions will be made during a grace period. OHSAS18001 will be migrated into ISO 45001 when it is issued. Because issue of ISO 45001 is delayed, validity period of certification of OHSAS 18001:2007 will be extended.</li><li>3. EEI has 145 Safety Officers (SOs) in oversea and 171 SOs in Philippines. 7 SOs in New Bohol Airport Site is included in 171.</li><li>4. Mr. Michael made a presentation "Safety Work at EEI Corporation" under the name of President of EEI, Mr. Roberto Jose L. Castillo, which has 68 slides.<ul style="list-style-type: none"><li>➤ EEI has an office in Japan and send staff to TOYO Engineering.</li><li>➤ EEI is the first Construction Company which includes Safety, Health, Environment &amp; Security (SHE&amp;S) as a Corporate Policy</li><li>➤ EEI understood that benefits from Safety Management are larger than costs for implementing and running the same.</li><li>➤ EEI's corporate target is Zero Fatalities, Zero Lost Time Injury (LTI), Zero Restricted Work. Restricted Work, which is a concept of United States, means that injured person</li></ul></li></ol>

may transfer to a work on light duty instead of record as absence from work, or may not transfer to another work but reduce worker's burden of work load. EEI tries to reduce Restricted Work also.

- In Philippines, Safety is gradually regarded as a part of Company's Social Responsibility, CSR.
- There were three slides which have a title of Culture of safety and they mention the following items.

\*Education and Training: all employees are to attend 40-hour OSH training seminar.

\*Stop Work Policy:

### Culture of Safety



**EEI Stop Work Policy**  
 All employees have the right, without fear of reprimand or retaliation, to stop work if seen as a clear and present danger.

\*KATAPATIRAN Big Brother Program: EEI as a Big Brother, supports and makes guidance to Small Brother with respect to Safety.



- KAPATIRAN PROGRAM FEATURES**
- Continuous Education
  - Compliance with Standards
  - Confirmation
  - Certification

\*\*\*end of memo\*\*\*



2-3: SOPI

Date/Time: 9:00-10:00 on November 17, 2016 Venue: Safety Organization of the Philippines, Inc. (SOPI) National President Room
Attendees: Mr. EROS G. ZUNICA, CSC (National President) Study Team: Mr. Mitani and Mr. Ikenaga
Subject: Re. SOPI
<ol style="list-style-type: none"><li>1. SOPI was founded in 1959, which is the first NPO for Safety in South Asia region. SOPI is a Professional, non-Profit, Non-government and National public organization. Now, 32 organizations are accredited by Department of Labor and Employment (DOLE) and conducting training of Safety, Health and Environment for Construction and Industry. SOPI is now working together with OSH-NET which is a private organization made under DOLE Administrative Order No.53 of 2010 and monitored by R.O. of DOLE with DOLE -OSHC. This SOPI office was built by the contributions of stakeholders in 1983. (DOLE -OSHC was built with assistance by JICA in 1986.)</li><li>2. SOPI is conducting the trainings and safety inspections, and holding conventions. SOPI recently inspected Engineering Plan for Subic Industrial Zone (Oil factory). Construction projects have obligations to assign safety officers who are certified and accredited. All engineers and workers should have taken the certificate of one-day construction safety orientation for entering the sites.</li><li>3. SOPI has been sending many members to JISHA (Japan Industrial Safety and Health Authority) for training. Number of Alumni reaches approx. 500. Training includes KYT (Kiken-Yochi Training in Japanese, Hazard Prediction Training) and the KY training material is being provided by JISHA. From 1995 to 2004, every year 2 trainees were invited by JISHA with its expense. Currently JISHA bears training costs only and trainees should bear other costs. Prioritized area is now shifted to Mongol/Malaysia etc.</li><li>4. SOPI is a member of APOSHO, Asia Pacific Occupational Safety and Health Organization. JISHA is also a member of APOSHO.</li><li>5. It is one of SOPI's Missions to build a culture of safety, health and environmental protection as a way of life. Safety is to be inherent nature of all human beings at the time of birth. Culture of Safety is motivation and communication.</li></ol>

6. SOPI conducts training for the management of contractors, such as owners and executive and/or operation officers.

When contractors apply for a renewal of the license they must attach the certificate of the training of the top management, with concept that Safety must come from Top management. (Top Down)

Inclusion of Safety into Corporate Social Responsibility (CSR) is one of the requirements by the Government.

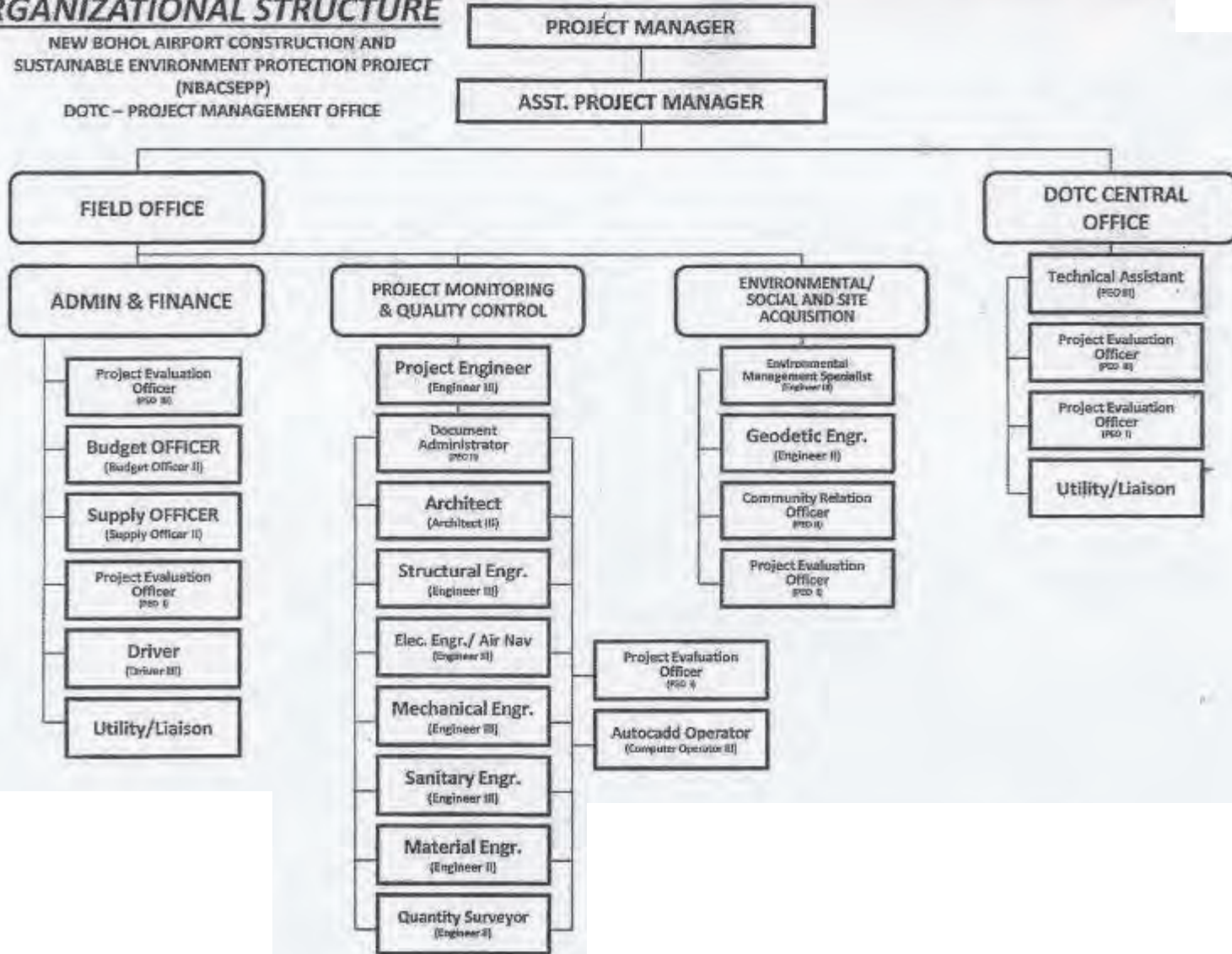
7. There is an award system by DOLE as incentives to companies which obtained good results by utilizing Safety Management effectively.

One is President award and the other is DOLE Secretary award. If President award is given, inspections by DOLE ROs are exempted for 5 years. In case of DOLE Secretary award, an exemption period is 2 years.

\*\*\*end of memo\*\*\*

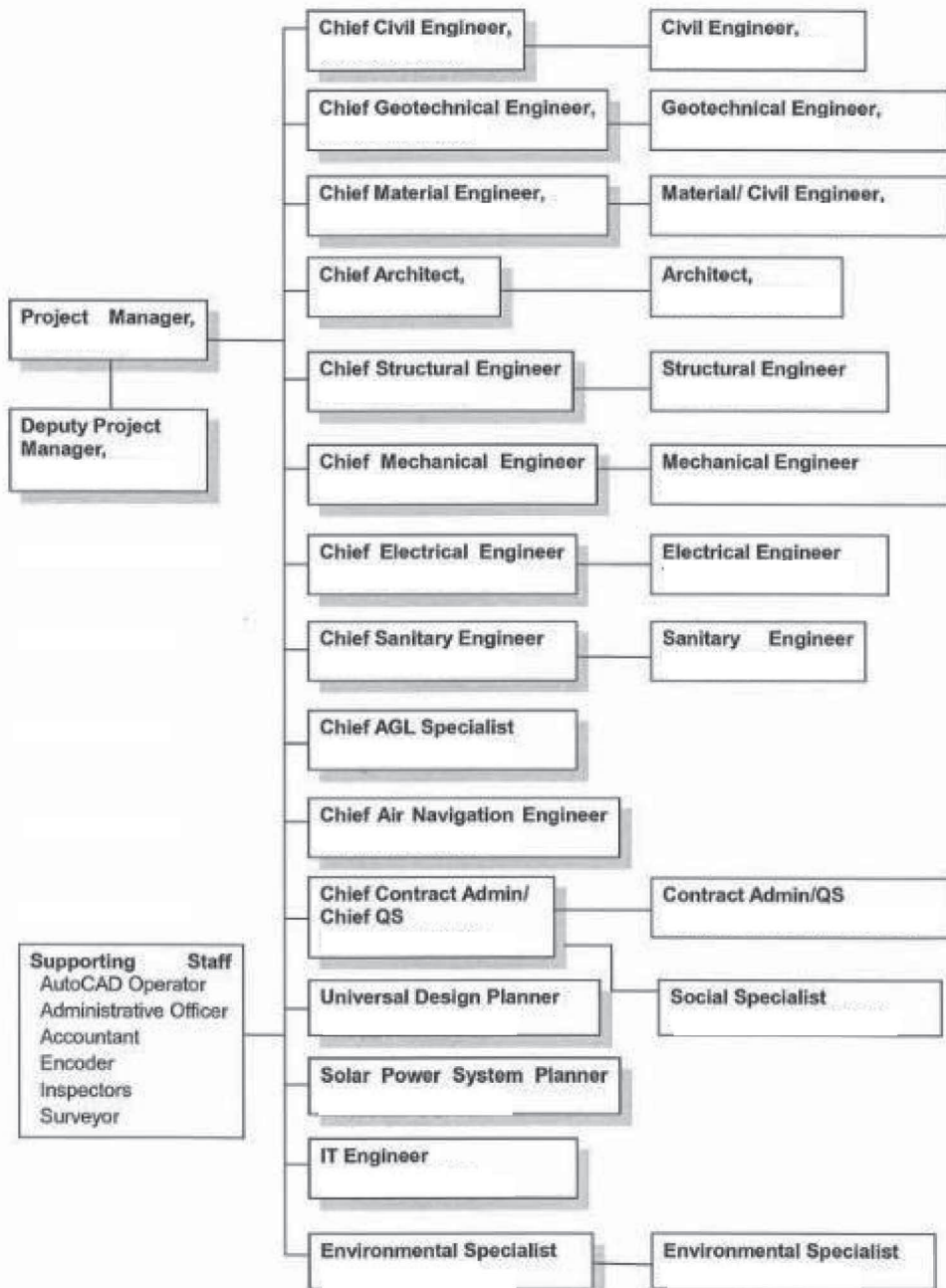
# ORGANIZATIONAL STRUCTURE

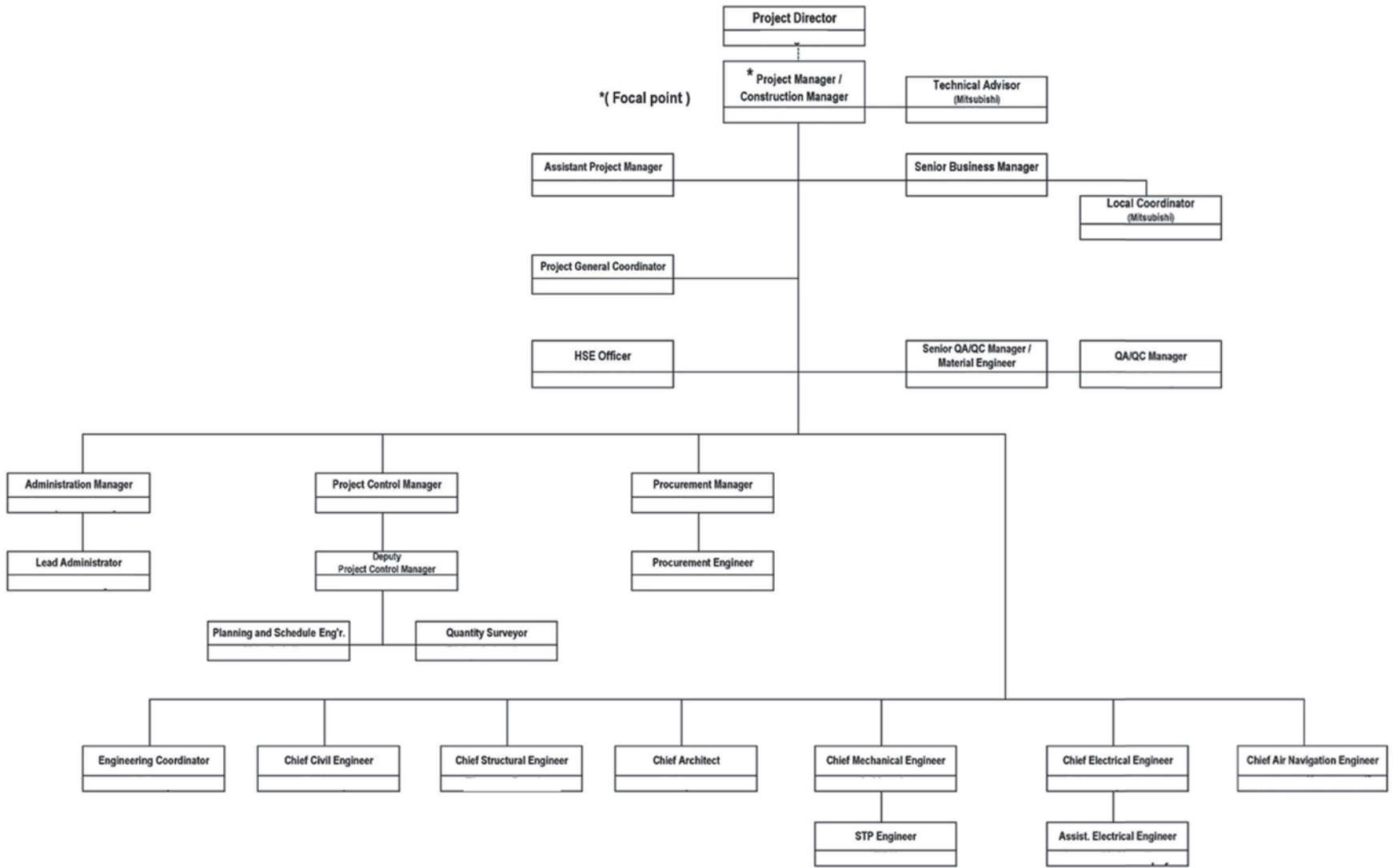
NEW BOHOL AIRPORT CONSTRUCTION AND  
SUSTAINABLE ENVIRONMENT PROTECTION PROJECT  
(NBACSEPP)  
DOTC – PROJECT MANAGEMENT OFFICE



Appendix-3 Site Organization Chart  
3-1 : DOTC

**New Bohol Airport Construction and Sustainable Environment Protection Project  
Engineer's Organizational Chart**





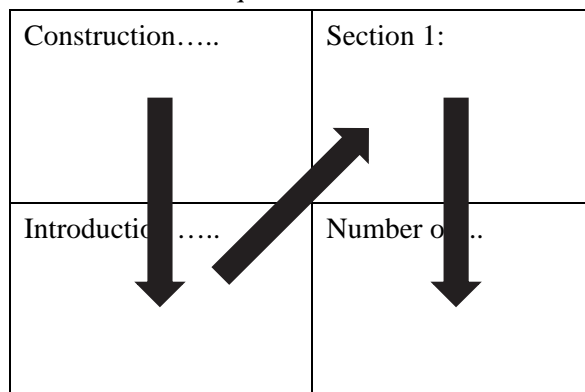
**Appendix-4 Seminar Slides**

4-1: Section 1: History of Accidents prevention in construction industry in Japan

4-2: Section 2: Introduction of JICA Safety Policy, JICA Guidance and Hazard Prediction Training

4-3: Section 3: Outline of Study Results, Observations and Recommendations

Sequence of Slides



# Construction Safety and Health Seminar

DEPARTMENT OF TRANSPORTATION

Columbia Tower, Ortigas Avenue, Mandaluyong City, Metro Manila

**THE NEW BOHOL AIRPORT**  
It's more fun in the Philippines

PROJECT NAME : NEW BOHOL AIRPORT CONSTRUCTION AND SUSTAINABLE ENVIRONMENT PROTECTION PROJECT	FUNDING AGENCY : JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
CONTRACT TITLE : CIVIL WORKS, PROCUREMENT OF GOODS AND RELATED SYSTEMS UNDER JICA L/A No. PH-256	CONSULTANT : JAPAN AIRPORT CONSULTANTS, INC. (JAC)
LOCATION : PANGLAO, BOHOL	CONTRACTOR : CHIYODA-MITSUBISHI JOINT VENTURE (CMJV)
EMPLOYER : DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS (DOTC)	DURATION : 30 MONTHS
	START : 22 JUNE 2015
	TARGET COMPLETION : DECEMBER 2015

From 14:00 to 16:00 on 15 November 2016

JICA Study Team for Safety Review Study 2016 KATAHIRA & ENGINEERS INTERNATIONAL

App-14

## Introduction- Study Background

- In September 2007, The Can Tho Bridge Accident occurred in Vietnam.
- The committee deployed by Ministry of Foreign Affairs Japan, made a recommendation to JICA for carrying out Safety Review by third party consultant, to prevent re-occurrence of the similar Accident.

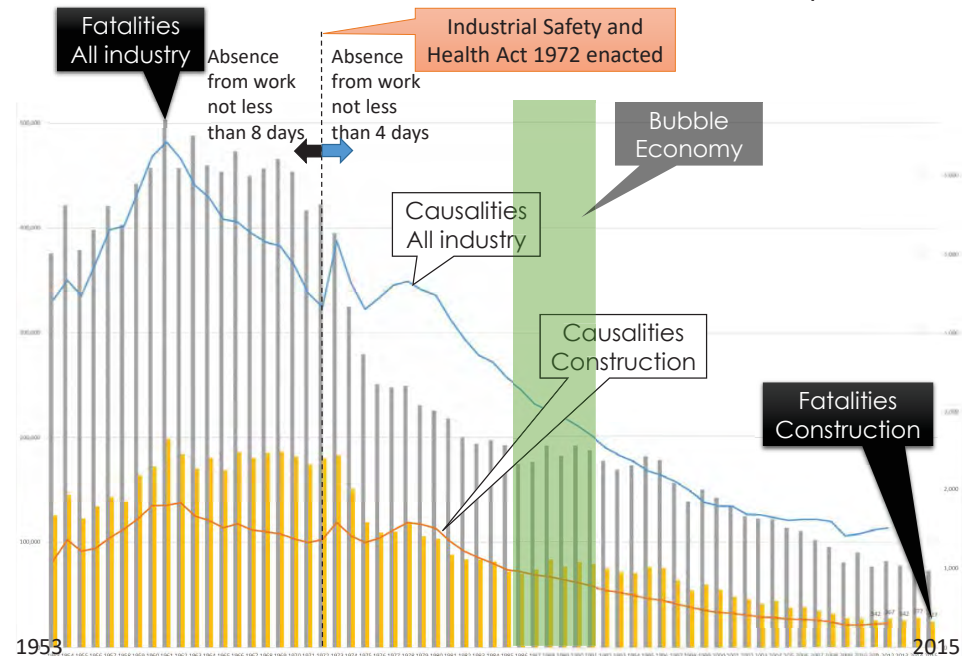
➔ As recommended by the committee, JICA has initiated Safety Reviews in respect of 13 on-going projects since 2009. Projects in Turkey, Uzbekistan, Vietnam, Philippines, Sri Lanka, Malaysia, Indonesia, India and Kenya were reviewed.



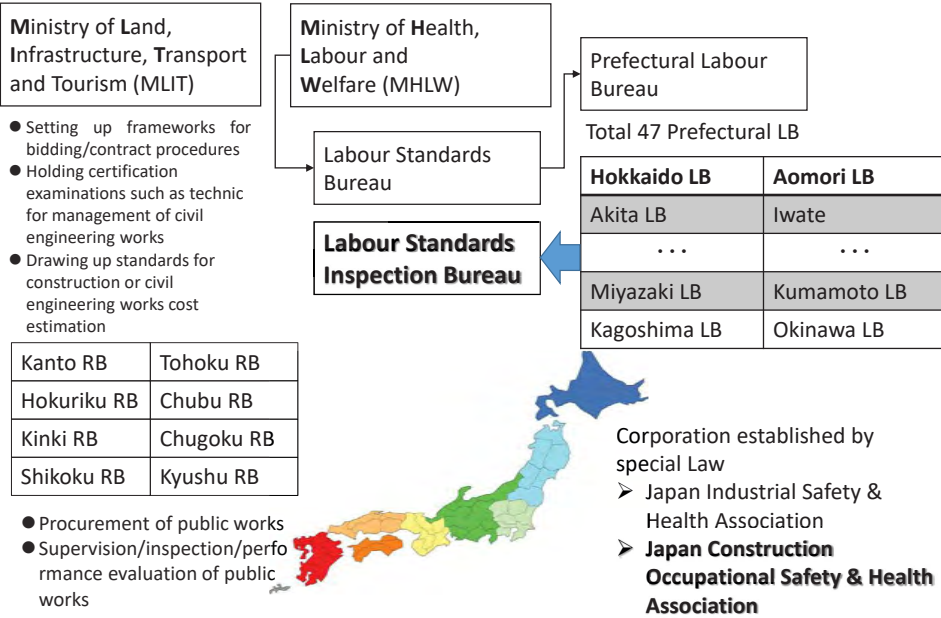
## Section 1:

Current situation of Accidents in construction industry and examples of Accident prevention measures taken in Japan

Number of Causalities and Fatalities in Japan



# Ministries in charge of Construction Safety & Health



App-15

## 12<sup>th</sup> Accident Prevention Program by MHLW (FY 2013 to 2017)

Action Program to be made by Minister of MHLW for reducing Accidents based on Industrial Health and Safety Act.

### Target for whole Industry

Reduce Number of fatalities by not less than 15% from base figure in FY 2012.  
Reduce Number of Causalities (LTI>3 days) by not less than 15% from the same.

### Target for Construction Industry

Reduce Number of fatalities by not less than **20% from base figure in FY 2012.**

### Priority Measures

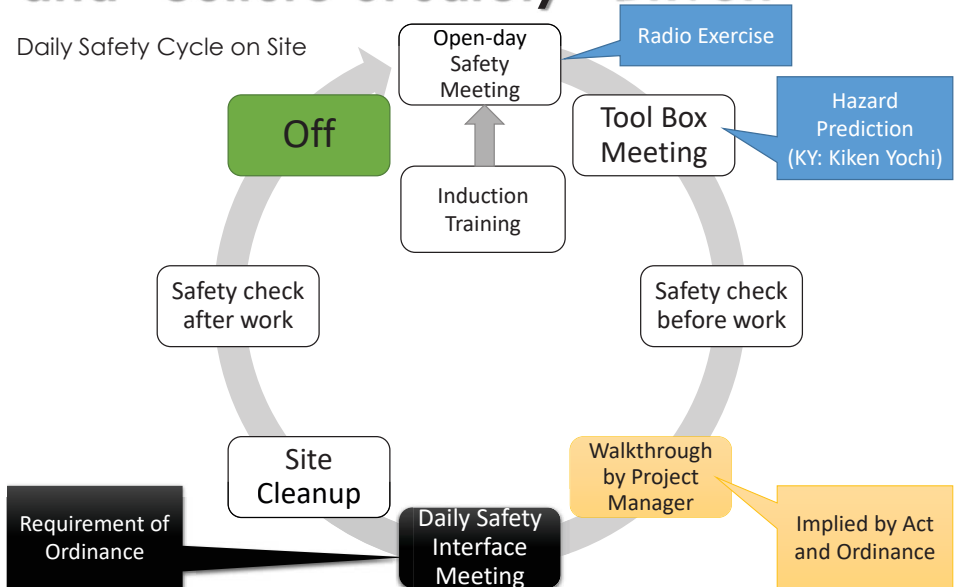
- Ensure accident prevention measures against falling Accidents from scaffolding, ladders, roofs etc. Recommend Harness type safety belt.
- Request an employer to estimate adequate costs for safety management and included and paid to relevant contractor.
- It relates dismantling works. Omitted.

# Features of Safety Management Framework in JAPAN

- Law** Industrial Safety and Health Act (No.57 of 1972)  
Order for enforcement of Industrial Safety and Health Act  
Ordinance on Industrial Safety and Health (Ordinance)  
>>>Very strict law with detailed enforcement regulations, rules.
- Inspection** Strict Inspection System for Workplaces  
>>>by the Labour Standards Inspectors authorized with judicial and police powers.
- Penalty** Suspension of Bidding Qualification for Contractors  
>>>Restriction for next bidding opportunity if one contractor caused a fatal accident/serious accident. Suspension continues maximum several months.

## At the beginning, Safety was Forced by Laws and Penalty-Driven.

## Self-discipline by stakeholders and "culture of safety"-Driven







From  
**Forced by Laws and Penalty-Driven**  
 To  
**Self-discipline by stakeholders and**  
**“culture of safety”-Driven**



App-17

## Section 2: Introduction of JICA Safety Policy and Guidance

### Safety for Construction Works in Japanese ODA Projects

#### 1. Safety Policy for Construction Works in Japanese ODA Projects

JICA formulated "Safety Policy for Construction Works in Japanese ODA Projects" in order to promote safety and protecting human life in construction works.

- [Safety Policy for Construction Works in Japanese ODA Projects \(PDF/53.2KB\)](#)

#### 2. The Guidance for the Management of Safety for Construction Works in Japanese ODA Projects

JICA formulated "The Guidance for the Management of Safety for Construction Works in Japanese ODA Projects" which compiles basic principles and technical measures on the management of safety for construction works in order to prevent and reduce occupational accidents on ODA construction works. The Guidance apply to works for public and other facilities to be constructed with Technical Cooperation, ODA loan (project type) and Grant Aid which JICA implements.

- [The Guidance for the Management of Safety for Construction Works in Japanese ODA Projects \(English\) \(PDF/261KB\)](#)
- [The Guidance for the Management of Safety for Construction Works in Japanese ODA Projects \(French\) \(PDF/1.00MB\)](#)
- [The Guidance for the Management of Safety for Construction Works in Japanese ODA Projects \(Spanish\) \(PDF/969KB\)](#)

## Safety Policy for Construction Works in Japanese ODA Projects (JICA Safety Policy)

Top Priority

Ensuring Safety and Protecting human life

JICA ensures

- ◆ high safety standard
- ◆ Improvement of accident prevention measures
- ◆ Dissemination of **the Japanese culture of Safety** to all stakeholders

### Basic Policy

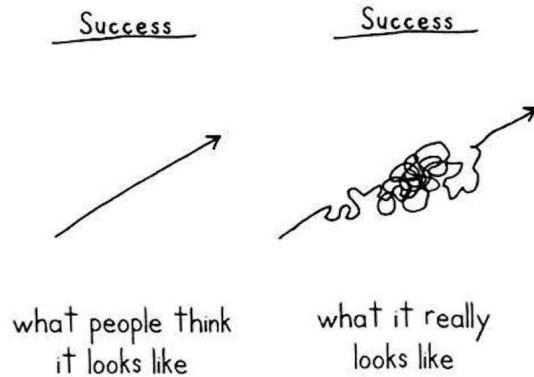
#### (1) Promoting highest Priority on Safety

- ◆ Measures to eliminate cause of Accidents---Corrective Action
- ◆ Measures to prevent Accidents---Preventive Action by risk assessment
- ◆ ...
- ◆ Information Sharing with all parties
- ◆ Ensuring participation of all relevant parties in construction safety measures

#### (2) Promoting Japanese culture of Safety

- ◆ JICA makes efforts to establish **Mechanism of Self-sustained and proactive safety measures** in relevant organizations and will raise awareness on safety measures
- ◆ JICA promotes understanding on importance of placing top priority on safety and protecting human life.
- ◆ **JICA stresses need to invest in adequate safety management measures in order to obtain enhancement of efficiency, productivity and quality by doing so.**
- ◆ In order to disseminate the **Japanese culture of Safety**, JICA will support developing country's safety management capacity development through ODA Projects.

# Guidance for the Management of Safety for Construction Works In Japanese ODA Projects



App-18

## Chapter 1: General Rules

### 1.1 Purpose

The Guidance contains the basic policies for safety management and technical guidance on specific methods for safe execution of works in order to prevent occupational accidents and public accidents on ODA construction projects for public and other facilities.

By fully understanding the Guidance and complying with the regulation therein, Project Stakeholders will be in a position to respect the basic human rights of all parties involved in ODA construction projects. This will help prevent the occurrence of occupational and public accidents by creating a culture of safety, and help realize social development in the recipient country. This is the purpose of the Guidance.

### 1.2 Scope of Application

The Guidance applies to works for public and other facilities to be constructed with ODA support (including both Grants and Loans) (hereinafter "ODA Projects").

### 1.3 Plans for Safety Management

Two plans for the safety management for construction work sites shall be prepared and implemented by the Contractor, namely the "Safety Plan" and "Method Statements on Safety."

### 1.4 Roles and Responsibilities of Project Stakeholders

The roles and responsibilities of Project Stakeholders (i.e. Employer, Engineer, Contractor, Subcontractor, Workers) specified.

## Chapter 1: General Rules (Plans for Safety Management)

	Safety Plan	Method Statements on Safety
When	At the pre-construction stage	At the construction stage
Prepared by	Contractor	Contractor
Role	Basic Plan (basic policies on the general safety management and operation for the entire works at site)	Detailed Plan (specifics for the safe execution of works and safety measures for each type of work)
Items to be included	<ol style="list-style-type: none"> <li>(1) Basic Policies for Safety Management</li> <li>(2) Internal Organizational Structure for Safety Management</li> <li>(3) Promotion of the PDCA Cycle</li> <li>(4) Monitoring</li> <li>(5) Safety Education and Training</li> <li>(6) Voluntary Safety Management Activities</li> <li>(7) Sharing Information</li> <li>(8) Response to Emergencies and Unforeseen Circumstances</li> </ol>	<ol style="list-style-type: none"> <li>(1) Construction plant and machinery</li> <li>(2) Equipment and tools</li> <li>(3) Materials</li> <li>(4) Necessary qualifications and licenses</li> <li>(5) The order of command for the works</li> <li>(6) Work items</li> <li>(7) Procedure for the execution of the works</li> <li>(8) Foreseeable risks</li> <li>(9) Precautionary measures</li> </ol>
Timing of Submission	<ul style="list-style-type: none"> <li>• at the time specified in the tender/the contract documents</li> <li>• no later than seven (7) days prior to the commencement of the relevant works</li> </ul>	<ul style="list-style-type: none"> <li>• prior to commencement of the relevant works according to the execution plans</li> <li>• Date specified in the contract documents</li> </ul>
Reviewed by	Employer, Engineer	Employer, Engineer

## Chapter 2: Basic Policies for Safety Management

- 2.1 Basic Principles of Safety Management
- 2.2 Compliance with Relevant Laws and Regulations
- 2.3 PDCA for Safety Management

## Chapter 3: Contents of the "Safety Plan"

- 3.1 Composition of the "Safety Plan"
- 3.2 Basic Policies for Safety Management
- 3.3 Internal Organizational Structure for Safety Management
- 3.4 Promotion of the PDCA Cycle
- 3.5 Monitoring
- 3.6 Education and Training for Ensuring Safety
- 3.7 Voluntary Basis Safety Management Activities
- 3.8 Sharing Information
- 3.9 Response to Emergencies and unforeseen Circumstances

## Chapter 4: Contents of the "Method Statement on Safety"

- 4.1 Composition of the "Method Statements on Safety"
  - 4.1.1 Items for inclusion in a "Method Statements on Safety"
  - 4.1.2 Method Statements on Safety - Template
- 4.2 Applicable Standards for the "Technical Guidance for Safe Execution of Works"
  - 4.2.1 Technical Guidance for Safe Execution of Works
  - 4.2.2 Applicable Standards for the Method Statements on Safety
  - 4.2.3 Applicable Standards for the Technical Guidance for Safe Execution (by the Type of Work)

## Chapter 5: Technical Guidance for Safe Execution (by the Type of Work)

- 5.1 Excavation Work
- 5.2 Pile Foundation Work
- 5.3 Formwork and Form Shoring System Work
- 5.4 Reinforcing Bar Work
- 5.5 Concrete Work
- 5.6 Work over Water
- 5.7 Demolition Work
- 5.8 Work where there is danger of oxygen deficiency
- 5.9 Sliding Work

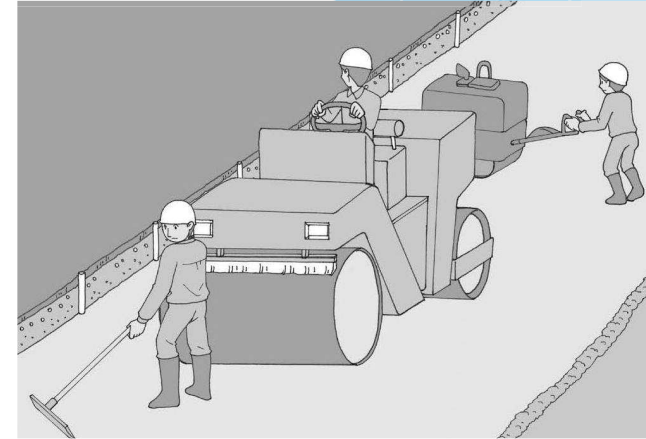
## Chapter 6: Technical Guidance for Safe Execution (by the Type of Accident)

- 6.1 Measures for Prevention of Fall Accidents
- 6.2 Measures for Prevention of Accidents Involving Flying or Falling Objects
- 6.3 Measures for Prevention of Accidents Involving Collapse of Structures
- 6.4 Measures for Prevention of Accidents Involving Construction Machinery
- 6.5 Measures for Prevention of Explosion Accidents
- 6.6 Measures for Fire Prevention
- 6.7 Measures for Prevention of Public Accidents
- 6.8 Measures for Prevention of Traffic Accidents
- 6.9 Protective Gear (Personal Protective Equipment)

## Workers Training For Hazard Prediction

- \* Where are the underlying potential hazards?  
Please guess and list up foreseeable hazards.

Case 10 **At the nighttime work, in poor lighting surroundings...**



## Workers Training For Hazard Prediction

- \* Where are the underlying potential hazards?  
Please guess and list up foreseeable hazards.

Case 21 **A worker is doing concrete placing at high-place.**



## Where are the underlying potential Hazards ?

Case 10

- 1) Road Roller hits a Labor in front
- 2) Collision between Road Roller and Hand Roller
- 3) Turnover of Road Roller because of Collision
- 4) ...

Case 21

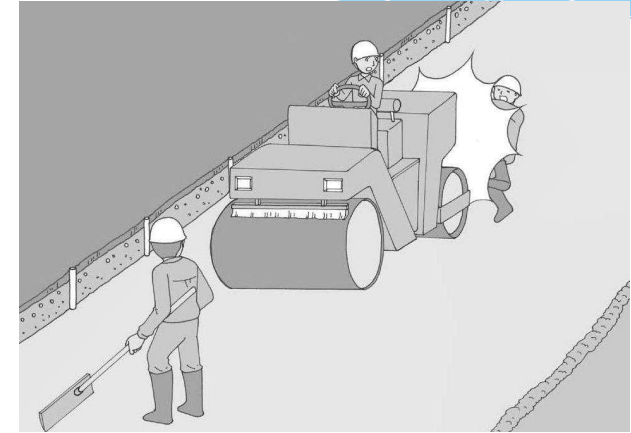
- 1) Spilled concrete hits Labors working on the ground
- 2) Concrete Hose hits Concrete Hose Man
- 3) Concrete Hose Man losses his balance and falls down
- 4) ...



**Why is that picture hazardous ?  
When you are placed in the scene, what will you do ?**

**One of the result when no countermeasures are taken against potential hazards.**

**AGAIN Why does this accident in the picture occur ?  
What measures can remove/mitigate hazard ?**



**Why is that picture hazardous ?**

**When you are placed in the scene, what will you do ?**

Case 10

- 1) Lighting up
- 2) Caution by alarm horn
- 3) Communication with each other
- 4) Checking blind side
- 5) (Placing guide flag man)

Case 21

- 1) Restriction of working upper and lower
- 2) Additional hose man as a helper
- 3) Procedure of casting concrete Method and Position
- 4) Harness type Safety Belt
- 5) (Install additional higher handrails)

**One of the result when no countermeasures are taken against potential hazards.**

**AGAIN Why does this accident in the picture occur ?  
What measures can remove/mitigate hazard ?**



## Hazard Prediction in Tool Box Meeting

### Tool Box Meeting (TBM)

#### Stage 1

Team Leader (TL) commences meeting

- 1) TL confirms the condition of all Members of Team (MT)
- 2) TL explains procedures and precautions of today's work to MT especially when procedures or member are changed from yesterday

#### Stage 2

TL informs the commencement of Hazard Prediction acting

TL asks what hazards are there in today's work

- 1) MT-1 using hand roller, collision with road roller
- 2) MT-2 grading the surface of road, collision with road roller
- 3) MT-3 doing #####, get \$\$\$\$ accident
- 4) MT-4 \*\*\*\*\*

TL writes every hazard raised on the board (in Japan, usually there is a white board)

## Hazard Prediction in Tool Box Meeting

### Stage 3

TL asks which is the most dangerous

- 1) MT- 5 replies 2) is . MT- 7 replies 3) is. MT-8 //////////////
  - 2) TL selects 2) as the most dangerous (and marks 2) on board )
- All members repeat 2) together

### Stage 4

TL asks what measures can remove/mitigate each hazards.

- 1) MT-1 lighting up adequately
- 2) MT-2 ensuring communication with each other
- 3) MT-3 doing \*\*\*\*\* 4) MT-4 doing +++++

TL selects 2) as a today's acting target

(writes "Ensuring Communication" on board)

All members repeat 'Ensuring Communication' with pointing the word on board

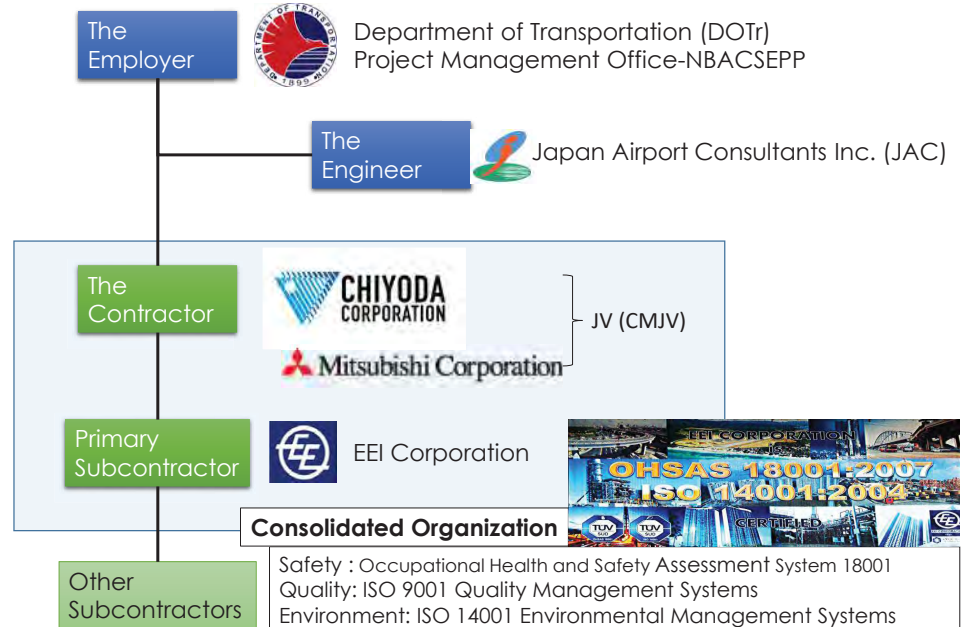
Finish TBM (It is standard that TBM takes about 5minutes)

## Section 3:

### Outline of Study results, Observation and Recommendation



## Project Organization



# Safety Management - Policy

Minimize SQE risks to **ALARP (as low as reasonably possible) level** from planning, design, procurement and construction and through the lifetime of a project by identifying every potential hazard and implementing proper controls.

## CORPORATE SHE&S POLICY

**FATALITIES.**  
**ZERO LOST TIME INJURIES.**  
**RESTRICTED WORK.**



**EVERYBODY GOES HOME SAFELY**



## CMJV SQE POLICY

May 11 2015

CMJV fully recognizes that all corporate activities must be performed in a responsible manner leading to "sustainable development" by balancing the advancement of humankind and conservation of global environment.

1. Each individual person has to promote SQE activities and enhance awareness knowledge and competence through

2. continual education and training.

3. Minimize SQE risks, including injuries and occupational diseases during the planning, design, procurement and construction and through the lifetime of a project, to a level of As Low As Reasonably Practicable (ALARP) by identifying every potential hazard and implementing proper controls.

4. Optimize the usage of natural resources and energy, reduce effluent and waste produced and recover usable material to achieve a low-carbon society through carbon management, including research and development of technologies to prevent or to resolve environmental problems; and transfer and spread such technologies globally.

5. Comply with relevant SQE legislation and regulations, and with such other requirements to which CMJV is/are/has to be.

6. Ensure the continual improvements of SQE management systems.

Each individual staff member shall follow the directives set forth in this policy.

**EVERY INCIDENT IS PREVENTABLE**

We will be the most reliable Project executing Entity in the world through SQE activities.

*Yasuo Tateoka*  
Project Manager  
Chiyoda - Mitsubishi Joint Venture

# Safety Management - Compliance

Occupational Safety and Health (OSH) regulatory framework  
Labor Code, Book IV (Presidential Decree No. 442 of 1974)

Occupational Safety and Health Standard 1978(OSHS) and its Amendment 1989

**Guideline Governing Occupational Safety and Health in the Construction Industry** (Department of Labor and Employment, **DOLE**, Department Order, **D.O. No. 13** of 1998)

- Section 5. **Construction Safety and Health Program**
- Section 6. **Personal Protective Equipment**
- Section 7. **Safety Personnel** (Safety Officer)
- Section 8. **Emergency Occupational Health Personnel and Facilities**
- Section 9. **Construction Safety Signages**
- Section 10. **Safety on Construction Heavy Equipment**
- Section 11. **Construction Safety and Health Committee** (Toolbox meeting etc.)
- Section 12. **Safety and Health Information** (Induction Training, Toolbox meeting etc.)
- Section 13. **Construction Safety and Health Training**
- Section 14. **Construction Safety and Health Reports**
- Section 15. **Construction Workers Skills Certificates**
- Section 16. **Workers' Welfare Facilities**
- Section 17. **Cost of Construction Safety and Health Program** (to be duly recognized)
- Section 18. **Miscellaneous**
- Section 19. **Violations and Penalties**

App-22

# Safety Management - Performance

As of 31 October 2016

Period	CMJV	Sub-Contractor (EEI)	Total
Previous Cumulative	157,201	1,013,160	1,170,361
This Month - October 2016	12,771	111,055	123,826
To Date Cumulative	169,972	1,124,215	1,294,187

Range	Man-hour	Fatality	No. of LTI	No. of TRI*	LTIR*	TRIR*
This Month	123,826	0	0	0	0	0
Safety Incident		JAPAN		2014	2015	
Incidents	8	General Contractor	0.91	0.92		
NCR	0	Civil	0.88	1.37		
First Aid	10	Architecture	0.92	0.85		
Fatalities	0					
Lost Time due to Accident	0					
BAC Positive	0					

Although Cumulative Working hours exceeded 1,000,000 , LTI (Loss Time Injury) is zero, hence LTIR (LTI Rate) is zero. It achieves the target of CMJV and also that of EEI Corporation.

# Safety Management - Process Cycle of the Day

Time	Activities
06:40	Pray
	Quality Policy reading by all workers and staff
	Exercise led by a team nominated
	Tool Box Meeting-whole
07:XX	TBM-Individual team
Up to 11:30	Working in the morning
11:30-13:00	Rest
From 13:00	Working in the afternoon
16:00	End of the day



### Patakaran Sa Kalidad (Quality Policy)

Kalidad ang siyang pangunahing pinahalagahan ng EEI korporasyon  
Ang pagpapahalagang ito ay makikita sa pamamalakad ng aming mga negosyo at sa aming pamumuhay  
Makikita ito sa kagalingan ng aming mga produkto at serbisyo  
Namumukod tanging resulta ng aming pansarili at sama-samang paggawa  
Kaaya-aya malinis at ligtas na kapaligiran  
Taos puso na pakikipag-ugnayan sa kapwa

Upang mapanatili ang kahalagang ito kami ay nangangako sa aming mga sarili Na ibibigay ang pangangailangan ng aming mga kilyente at namumuhunan At sa patuloy na pagsasaayos ng aming sistema sa kalidad

# Safety Management – Process System for correction on site

CMJV/EI

Seven safety officers (SOs) are being on duty for each working place. Even workers can easily access SO when they found unsafe conditions. SO can take immediate action because SO has enough power delegated by Top Management.

**No NCR for Safety has been issued to date.** Deployment of SOs and consolidated communication did not need NCR to be issued so far. For future,...

Employer/Engineer

**Let the Contractor to correct/repair/make good upon pointing out on site,** without issuing paper site instruction.

**NCR(Non-conformity or Non-conformance Report):** It is issued at Audit of Management System. It also may issue during construction, if such contract is operated by management system (MS). NCR requires objective evidence of Non-conformity. NCR is to be issued to improve MS by investing root causes and taking corrective action for removing root causes.

App-23

## Observations by Study Team (ST)

**1. Safety Induction training of CMJV :**The contents of it is comprehensive and it nearly covers JICA Guidance. It is better to include local rules of NBAC-SEPP Site.

**2. Identification of SO** by red color vest is a good idea. "Employee Authorization to STOP Work" issued by EEI President is excellent.

**3. Permit to Work (PTW):** It is an interface document between Method Statement approved by JAC and document used on site. Foreman will prepare PTW based on MS with briefing by Authorized Supervisor and SO is the authority to issue PTW upon consent of Site Management.



EEI CORPORATION  
A YGC Member

### Employee Authorization to STOP Work

As an EEI employee, you have the authority without fear of reprimand or retaliation, to immediately stop any work activity that you and/or your team may be doing that presents a clear and present danger to you, your co-workers, our clients, partners, or the public. It is your responsibility to report any conditions or activities that involve violation of established Safety and Health policies. If you do not feel the issue is addressed adequately, you have the responsibility to raise the issue higher.

Remember, safety is everyone's responsibility.

*Roberto Jose L. Castillo*  
ROBERTO JOSE L. CASTILLO  
President & Chief Executive Officer

## Observations by ST

**4. Safety Assessment:** PC software was provided and once Hazard ID and other necessary variables are given, results come out automatically. Because Results so far are less than 20, it classified as risk lever CLEAR: risk is negligible. ST points out that a check of results output of PC by a senior engineer is required as risk level rises. At site level, Hazard Prediction is popular in JAPAN.

Results=Probability Score  
(Likelihood score x  
Adjustment factor) x  
Severity of consequences  
score

6.0 RISK-BASED CONTROL PLAN

RISK LEVEL	MINIMUM CONTROLS
CLEAR Acceptable Risk (R < 20)	Risk is negligible, hence: <ul style="list-style-type: none"> <li>Existing controls shall be maintained. No additional control or action is required except compliance to applicable legal &amp; other requirements including use of PPE if applicable.</li> </ul>
BLUE Low/ Relatively Acceptable Risk (20 ≤ R < 50)	Risk is low. Efforts shall be made to reduce risk in accordance with the prescribed hierarchy of controls which include among others the following: <ul style="list-style-type: none"> <li>Compliance to applicable legal and other requirements including use of PPE if applicable</li> <li>Identification and monitoring and measurement of relevant OSH parameters</li> </ul>

**5. Accident Cause Analysis:** Clear procedures exists in Safety Manual of EEI. Accident cause is analyzed as follows.  
+ First immediate cause (direct cause) is to be identified.  
+Then root cause is to be investigated by analyzing immediate or basic cause to identify it comes from non-conformance or inadequate standards in project SHES management system.

## Recommendation by ST (1)

- It is highly recommended to **held Daily Safety Interface Meeting to be chaired by CMJV.**
- As work is progressed and many relevant contractors with different trades come into Site. Current consolidated communication should be kept.





## Recommendation by ST (2)

Current conditions of the Site is deviated from the requirement of Guidance 6.1.2.2 (8) Openings

It is recommended to install adequate handrails or fencings around openings, or  
Safety passage for workers should be clearly indicated on site by some means or  
find another solution



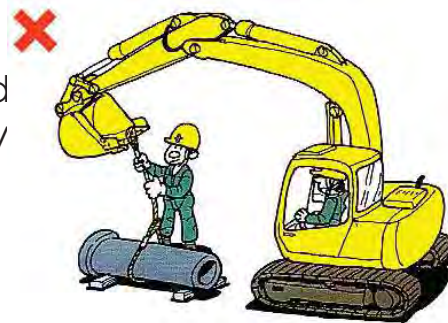
App-24

Thank you very much for your patience.

Maraming salamat sa inyo para sa iyong pasensya.

## Recommendation by ST (3)

Deviation was observed in unloading area of concrete pipes where a backhoe was used as a lifting machine and unload concrete pipes from a lorry



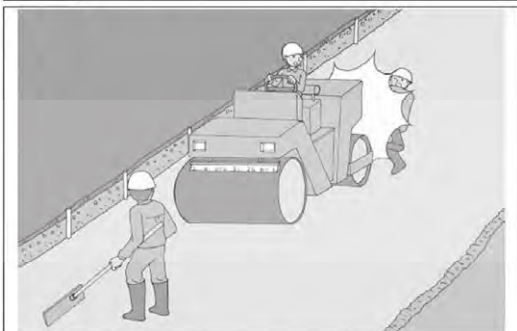
It is deviation from Guidance 5.1.2.4 (7) prohibition of unintended use of machinery.

A proper equipment is to be used.



[https://www.jica.go.jp/english/our\\_work/types\\_of\\_assistance/c8h0vm00008zx0m8-att/casebook\\_en.pdf](https://www.jica.go.jp/english/our_work/types_of_assistance/c8h0vm00008zx0m8-att/casebook_en.pdf)

**Case10 Road roller hit a worker.**

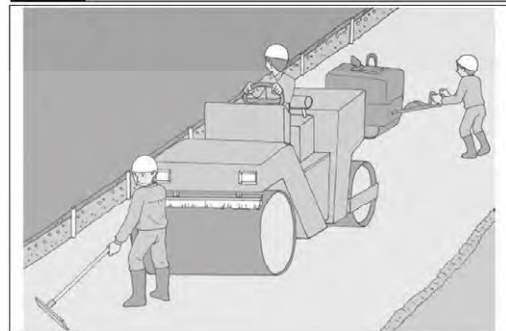


**Case21 The worker fell down to the ground by the back action of the flexible tube.**



Extract form "Worker's Training Material for Hazard Prediction"

**Case10 At the nighttime work, in poor lighting surroundings...**



**Case21 A worker is doing concrete placement at high-place.**



Safety Policy for Construction Works in Japanese ODA Projects

1. Basic Concept

The highest priority must be placed on ensuring safety and protecting human life in construction works of Japanese ODA projects. As an organization that supports economic and, social development in developing countries, Japan International Cooperation Agency (hereinafter referred to as JICA) is expected to ensure high safety standards on its construction sites. JICA is determined to improve prevention measures and reduce occupational accidents, with the aim of eventually eradicating all preventable accidents.

JICA recognizes its role in disseminating "the Japanese culture of safety" to all organizations and individuals engaged in Japanese ODA construction projects.

2. Basic Policy

(1) Promoting the highest priority on safety for all construction works

JICA will further promote maximum safety measures for prevention of occupational accidents. This will ensure that all parties in construction works prioritize safety and protecting human life, in compliance with the following basic policy for safety management.

Basic Policy for safety management

- Full implementation of measures to eliminate causes of accidents
- Full implementation of measures to prevent accidents
- Compliance with the related rules and regulation applied to Japanese ODA projects
- Full implementation of measures to prevent public accidents
- Full implementation of PDCA (Plan, Do, Check, Act) cycle of safety management
- Information sharing with all parties
- Ensuring participation of all relevant parties in construction safety measures

In order to ensure safety in construction works, JICA formulated "The Guidance for the Management of Safety for Construction Works in Japanese ODA Projects." JICA is determined to

improve the implementation of safety measures in compliance with the Guidance. JICA is also determined to promote the full implementation of safety measures through site visits by JICA experts and missions.

(2) Promoting "the Japanese culture of safety"

JICA will promote the dissemination of our experience in construction safety, which can be branded as "the Japanese culture of safety" in cooperation with employers, consultants and contractors.

- JICA will promote efforts to establish mechanisms of self-sustained and proactive occupational safety measures in relevant organizations, such as executing agencies, and will raise awareness on safety measures in developing countries.
- JICA will promote understanding among all parties in developing countries on the importance of prioritizing safety and protecting human life. We will also stress the need to invest in adequate safety management measures and highlight that by conducting appropriate safety management, efficiency, productivity and quality can be enhanced.

In order to disseminate "the Japanese culture of safety," JICA will support developing countries' safety management capacity development through ODA projects, including construction works and technical cooperation.

The Safety Policy for Construction Works in Japanese ODA Projects will be communicated to all employees and personnel who work for or on the behalf of JICA. It will also be made available to the wider public.

30 March 2015

Akihiko Tanaka  
President  
Japan International Cooperation Agency