添付資料

1　第１回合同調整委員会議事録

Minutes of Meeting
on
The First Joint Coordination Committee
for
The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO in the Arab Republic of Egypt

Cairo, December 3, 2006

S. Bayoumi

Dr. Salah Bayoumi
Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)

武内正博

Mr. Masahiro Takeuchi
Chief Advisor
Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO
JICA

Prof. Dr. Abdel Kawi Khalifa
Chairman
Holding Company for Water and Wastewater (HCWW)

Upon the commencement of the Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO (hereinafter referred to as "the Project"), the first Joint Coordination Committee (hereinafter referred to as "JCC") for the Project was held on December 3, 2006 in Cairo. The Japanese expert team headed by Mr. Masahiro Takeuchi, Chief Advisor of the Project, presented the Inception Report which describes implementation policy of the Project. JCC members approved the report in principle.

The major points discussed and agreed are summarized as follows:

1. Establishment of Technical Committee

As in Inception Report, for the smooth implementation of the Project, the Japanese expert team proposed to set up a Technical Committee (hereinafter referred to as "TC") where technical matters or particularities of project activities will be discussed/coordinated and preparatory consultation will be made prior to JCC which will make a conclusive decision. TC will be chaired by SHAPWASCO Chairman.

The members of TC shall include the following:

- SHAPWASCO : Chairman
- HCWW : Representative
- Head of UFW team at SHAPWASCO headquarters
- Head of SOP team at SHAPWASCO headquarters
- Japanese experts : All the Japanese experts present in Egypt at the time of TC meeting
- JICA Egypt office : Representative

JCC members agreed basically on the proposal of setting up Technical Committee and that the project team, jointly led by Project manager (Chairman of SHAPWASCO) and Chief Advisor, will work out the details of TC.

2. Counterpart Training in Japan and Work Schedule

A question was raised whether there was flexibility on training programming and the project work schedule such as phasing of activity, details of activity and so forth.

It was explained by JICA and understood by all the parties that every training opportunity held in Japan is comprehensively programmed and coordinated through diplomatic channel between Egyptian and Japanese governments on annual basis, considering nation-wide training needs.

Regarding the Project work schedule, such modification shall be confirmed by consultation with JICA headquarters.

Annex

List of Participant

[Egyptian side]

Prof. Dr. Abdel Kawi Khalifa	Chairman of HCWW
Dr. Salah Bayoumi	Chairman of SHAPWASCO
Mrs. Samira Necola	Representative of NOPWASD

[Japanese side]

Mr. Masahiro Takeuchi	Expert for Water supply planning/Chief Advisor
Mr. Noboru Saeki	Expert for Water treatment 1
Mr. Keizo Kimura	Expert for Water treatment 2
Mr. Mohamed Nagi	Facilitator of the Project team
Mr. Yoshiki Omura	Leader, Monitoring team of JICA
Mr. Makoto Asai	Study planning, Monitoring team of JICA
Mr. Masakatsu Komori	Deputy Resident Representative, JICA Egypt office
Ms. Izumi Shoji	Assistant Resident Representative, JICA Egypt office
Dr. Ashraf M. El-Abd	Project officer, JICA Egypt office

S.B

2　第２回合同調整委員会議事録

Minutes of Meeting
on
The Second Joint Coordination Committee
for
The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO in the Arab Republic of Egypt

Cairo, June 10, 2007

Dr. Salah Bayoumi
Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)

Mr. Masahiro Takeuchi
Chief Advisor
The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO
JICA

Prof. Dr. Abdel Kawi Khalifa
Chairman
Holding Company for Water and Wastewater (HCWW)

In the course of Phase-2 of the Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO (hereinafter referred to as "the Project"), the second meeting for Joint Coordination Committee (hereinafter referred to as "JCC") for the Project was held on June 10, 2007 in Cairo.

The Japanese expert team headed by Mr. Masahiro Takeuchi, Chief Advisor of the Project, presented Project Design Matrix-1 (PDM1) and Plan of Operation-1 (PO1) as attached which are the first revision of PDM0 and PO0 confirmed between the Egyptian side and Japanese side on June 13, 2006.

The team explained the contents of PDM1 and PO1 to the committee members. After discussions, PDM1 and PO1 have been approved by the committee.

Attachments

1. Project Design Matrix-1 (PDM1)
2. Plan of Operation-1 (PO1) for UFW Reduction Activity
3. Plan of Operation-1 (PO1) for SOP Activity
4. Comparison table between PDM0 and PDM1 (summary)

Annex

List of Participant

[Egyptian side]

Prof. Dr. Abdel Kawi Khalifa	Chairman of HCWW
Dr. Salah Bayoumi	Chairman of SHAPWASCO Representative of NOPWASD
Mr. Mahmoud Motawea	Assistant Secretary General of Sharkia Governorate

[Japanese side]

JICA Expert Team

Mr. Masahiro Takeuchi	Expert for Water supply Planning/Chief Advisor
Mr. Masatoshi Seno	Expert for Unaccounted-for Water
Mr. Akihiko Okazaki	Expert for Leakage Detection
Mr. Noboru Saeki	Expert for Water Treatment 1
Mr. Keizo Kimura	Expert for Water Treatment 2/Mechanical Equipment
Mr. Mitsuhito Omori	Expert for Hydraulic Analysis for Network
Mr. Nobuyuki Iijima	Expert for Hydrogeology
Mr. Takashi Hara	Expert for Water Quality Control
Mr. Mohamed Nagi	Facilitator of the Project Team
Dr. Mohamed Sobhy	Senior Engineer for UFW Reduction Activity
Mr. Mohamed Khalaf	Senior Engineer for SOP Activity

JICA Egypt Office

Mr. Katsuhiko Ozawa	Resident Representative, JICA Egypt office
Ms. Izumi Shoji	Assistant Resident Representative, JICA Egypt office
Dr. Ashraf M. El-Abd	Project officer, JICA Egypt office

Project Design Matrix-1 (PDM1)

Project Title: The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO

Target Area : Sharkia Governorate, Egypt **Target Group : Staff of SHAPWASCO** **Duration : FY2006 – FY2009**
Final Beneficiaries : People in Sharkia Governorate **Date : June 10, 2007**

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
[Overall Goal] Management capacity of operation and maintenance of water supply facilities is improved in Sharkia Governorate.	1. Performance indicators in the field of management capacity of operation and maintenance are improved for all branches in the Governorate.	SHAPWASCO quarterly report submitted to HCWW	
[Project Purpose] Management capacity of operation and maintenance of water supply facilities is improved in target areas.(1)	1. Performance indicators in the field of management capacity of operation and maintenance are improved in target areas. (2) 2. Activities on UFW and SOPs are incorporated into the routine work.	SHAPWASCO quarterly report submitted to HCWW Project Progress Report Questionnaire survey Organization chart	Sector policy of the Egyptian government will not drastically change on management of water supply services.
[Outputs] 1. Unaccounted-for water (UFW) ratio is reduced in the pilot project areas.	1-1 Water balance analysis can be conducted properly for the pilot project areas. 1-2 UFW ratio (initial) is reduced from xx% to xx% in the pilot project areas. UFW ratio (initial) will be set by August 2007. 1-3 Leakage (real loss) ratio (initial) is reduced from xx% to xx% in the pilot project areas. Leakage ratio (initial) will be set by August 2007. 1-4 At least three (3) members of each UFW team of Zagazig City and Hihya Markaz acquire leakage detection survey techniques. 1-5 At least one (1) member of each UFW team of other Markazes related to the pilot project areas acquires leakage detection survey techniques.	Project Progress Report Project Progress Report Project Progress Report Test by JICA Expert Project Progress Report Test by JICA Expert Project Progress Report	

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
2. Operation and maintenance capacity of water supply facilities is strengthened.	2-1 Basic system drawings of the facilities are prepared and updated at five (5) model facilities (2 WTPs, 1 FMRP, 1 BPS and 1 well station) which represent the facilities of SHAPWASCO.	Project Progress Report	
	2-2 Manuals for management of O&M and water quality control are developed and updated as SOPs by the following SOP packages (3) for plant components and for three activity categories, i.e. Operation, Maintenance and Water Quality Control for each model facilities. - Not less than twenty (20) SOP packages at WTP - Not less than five (5) SOP packages at FMRP, BPS and well stations.	Project Progress Report	New Faqus WTP is handed over from NOPWASD to SHAPWASCO in due course.
	2-3 For the application of SOPs to the field operation, class room training and OJT to operators are conducted at all the five (5) model facilities.	Project Progress Report	New Faqus WTP is handed over from NOPWASD to SHAPWASCO in due course.
	2-4 Not less than eighty (80) percent of SOP/HQ and SOP/MF members acquire the ability to apply knowledge and skills of SOP.	Test by JICA Expert Project Progress Report	
	2-5 O&M Plan is developed at not less than one (1) model WTP.	Project Progress Report	
	2-6 Water quality control system applying the new HCWW regulation is prepared.	Project Progress Report	
	2-7 Well inventory is prepared with a standard form and the first round of investigation is conducted for all the SHAPWASCO well stations.	Project Progress Report	
	2-8 Hydraulic analysis is done for not less than two pilot project areas.	Project Progress Report	

Note (1) Target areas for output 1 are the pilot project areas specified by the Project in Zagazig City, Zagazig Markaz, Hihya Markaz, Diarb Nigm Markaz and Ibrahimiya Markaz, respectively. Target areas for output 2 are all the water supply facilities except compact units.

(2) Following PI has been selected as a specific indicator.
- Percentage of measured water production (%), etc.
  Volume of measured production water / total volume of produced water
  Volume of measured production water : means total volume of measured produced water in stations equipped with meters working in cubic meter

(3) Plant component includes the plant processes such as intake, raw water pumps, sedimentation, etc. SOP package is a set of SOPs for operation, maintenance and water quality control activities of each plant component.

Activities	Inputs		Important Assumption
	Japanese Side	Egyptian Side	
1 Unaccounted-for water (UFW) ratio is reduced in the pilot project areas.	1. Experts	1. Counterparts	Employees who received trainings by the Project will continuously work for SHAPWASCO.
1-1 General	- Chief Advisor	- Project director	
(1) Analyzing the current situation on UFW	- UFW reduction specialist	- Project manager	
(2) Selecting candidate areas for pilot project areas	- Leakage detection trainer	- UFW teams	
(3) Organizing UFW reduction teams	- Water treatment specialist	- SOP teams	
(4) Formulating an action plan for UFW reduction	- Hydraulic engineer for network analysis		
(5) Conducting water conservation campaign	- Electrical engineer		Personnel transfer of executive management will not affect the implementation of the Project.
(6) Formulating long-term pipe replacement plan for preventive works	- Mechanical engineer		
(7) Holding workshops and seminars	- Hydro-geologist		
1-2 Actions	- Water quality control specialist		
U1 Conducting training of C/P staff at Mostrod Training Center			Funds from NOPWASD and SHAPWASCO in related to the Project will be allocated as planned.
U2 Conducting leakage (minimum night flow : MNF) survey for candidate areas			
U3 Determining six (6) pilot project areas	2. Equipment and materials	2. Office space and facilities for experts	
U4 Preparing GIS drawings			
U5 Learning experiences of Jordan UFW reduction project	3. Trainings	3. Equipment	
U6 Making field survey of distribution network			
U7 Surveying installation conditions of water meters and conducting meter readings	4. Local cost	4. Necessary information	
U8 Measuring metering error for working meters and water wastage in the house		5. Local cost All the cost for repairing leakage in distribution network of the pilot project areas	
U9 Conducting MNF survey			
U10 Making water balance analysis before repair works			
U11 Conducting leakage detection survey			
U12 Repairing leaking parts			
U13 Conducting MNF survey (including meter readings) after repair works			
U14 Making water balance analysis after repair works and its evaluation			

Activities	Inputs		Important Assumption
	Japanese Side	Egyptian Side	
2 Operation and maintenance capacity of water supply facilities is strengthened		6. Others - Civil works, electrical works and other necessary works for the installation of flow meters - Measurement of flow rate by the flow meters - Monitoring of wells - MNF survey and countermeasure works for other areas than the pilot project areas	
2-1 General			
(1) Surveying current conditions of water supply facilities			
(2) Selecting Model Facilities (MF)			
(3) Organizing SOP/MF teams			
(4) Holding workshops and seminars			
2-2 Actions			
S1 Preparing basic system drawings			
S2 Preparing unified forms of O&M records and reports			
S3 Measuring intake / production water volume at 7 WTPs			
S4 Developing SOPs for model facilities			
S5 Examining water distribution control practice in the network			
S5-1 Pilot project for distribution control in small areas			
S5-2 Hydraulic analysis of water supply and distribution			**Pre-Conditions**
S6 Applying SOPs in O&M			
S7 Developing SOPs for the remaining facilities			
S8 Formulating O&M plans			
S9 Developing water quality control program			
S10 Developing well inventory forms and monitoring well stations			
2-3 Monitoring achievement of SOP			

Abbreviations:

O&M : Maintenance and operation
BPS : Booster pumping station
HCWW : Holding Company for Water and Wastewater
SHAPWASCO : Sharkia Potable Water and Sanitation Company
FMRP : Fe/Mn removal plant
MF : Model facilities
WTP : Water treatment plant
HQ : Headquarters
NOPWASD : National Organization for Potable Water and Sanitary Drainage
OJT : On-the-job training
SOP : Standard Operational Procedure

Plan of Operation-1 (PO1) for UFW Reduction Activity

Project Name : The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO

Duration : November 2006 - October 2009 (3 years)

Item		2006		2007											2008											2009								
		Phase-1					Phase-2											Phase-3											Phase-4							
		11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
1	**Unaccounted-for water (UFW) ratio is reduced in the pilot project areas.**																																				
1-1	**General**																																				
(1)	Analysing the current situation on UFW																																				
(2)	Organizing UFW teams at HQ, Zagazig City and all the markazes																																				
(3)	Selecting candidate areas for pilot project areas																																				
(4)	Conducting water conservation campaign																																				
(5)	Formulating and executing long-term pipe replacement plan for preventive works																																				
(6)	Holding Workshops and Seminars																																				
1-2	**Actions**																																				
Action U1	Conducting training of C/P staff at Mostorod Traing Center																																				
Action U2	Conducting leakage (MNF) survey for candidate areas																																				
Action U3	Determining six (6) pilot project areas																																				
Action U4	Preparing GIS drawings																																				
Action U5	Learning experiences of Jordan UFW reduction project																																				
Action U6 & U7	Making field survey of distribution network (Action U6) / Surveying installation conditions of water meters and conducting meter readings (Action U7)																																				
Action U8	Measuring metering error for working meters and water wastage in the house																																				
Action U9 & U10	Conducting leakage (MNF) survey (Action U9) / Making water balance analysis before repair works (Action U10)																																				
Action U11	Conducting leakage detection survey																																				
Action U12	Repairing leaking parts																																				
Action U13	Conducting leakage survey (including meter readings) after repair works																																				
Action U14	Making water balance analysis after repair works and its evaluation																																				

A2-8

Plan of Operation-1 (PO1) for SOP Activity

Project Name : The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO

Duration : November 2006 - October 2009 (3 years)

	Item	2006	2007												2008												2009								
		Phase-1					Phase-2											Phase-3											Phase-4								
		11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
2	**Operation and maintenance capacity of water supply facilities is strengthened.**																																				
2-1	**General**																																				
(1)	Surveying the current conditions of water supply facilities																																				
(2)	Selecting Model Facilities (MF)																																				
(3)	Organizing SOP/MF teams																																				
(4)	Holding Workshops and Seminars				▽			▽	◆				▼				▼			▽					▼				▼			◆						
2-2	**Actions**																																				
Action S1	Preparing basic system drawings																																				
Action S2	Preparing unified forms of O&M records and reports																																				
Action S3	Measuring intake / production water volume at 7 WTPs																																				
Action S4	Developing SOPs for Model Facilities																																				
Action S5	Examining water distribution control practices in the network																																				
S5-1	Pilot project for distribution control in small areas																																				
S5-2	Hydraulic analysis of water supply and distribution																																				
Action S6	Applying SOPs in O&M																																				
Action S7	Developing SOPs for the remaining facilities																																				
Action S8	Formulating O&M plans																																				
Action S9	Developing water quality control program																																				
Action S10	Developing well inventory forms and monitoring well stations																																				
2-3	**Monitoring achievement for SOP**																																				

▽ Internal Workshop
▼ Open Workshop
◆ Open Seminar

Comparison between PDM0 and PDM1

Project Title : The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO
Target Area : Sharkia Governorate, Egypt **Target Group : Staff of SHAPWASCO** **Duration : FY2006 – FY2009**
Final Beneficiaries : People in Sharkia Governorate **Date : June 10, 2007**

Narrative Summary	Objectively Verifiable Indicators		Remarks
	PDM0	PDM1	
[Overall Goal] Management capacity of operation and maintenance of water supply facilities is improved in Sharkia Governorate.	1. Performance indicators in the field of management capacity of operation and maintenance are improved for all branches in the Governorate.	1. Same as PDM0	
[Project Purpose] Management capacity of operation and maintenance of water supply facilities is improved in target areas.(1)	1. Performance indicators in the field of management capacity of operation and maintenance are improved in target areas. (2) 2. Activities on UFW and SOPs are incorporated into the routine work.	1. Performance indicators in the field of management capacity of operation and maintenance are improved in target areas.(2) 2. Same as PDM0	PI is set in PDM1 Refer to Note (2)
[Outputs] 1. Unaccounted-for water (UFW) ratio is reduced in the pilot project areas.	1-1 Volume of unaccountable-for water can be properly measured. 1-2 Unaccounted-for water ratio is reduced compared with the baseline data obtained at the beginning of the Project.	1-1 Water balance analysis can be conducted properly for the pilot project areas. 1-2 UFW ratio (initial) is reduced from xx% to xx% in the pilot project areas. UFW ratio (initial) will be set by August 2007 1-3 Leakage (real loss) ratio (initial) is reduced from xx% to xx% in the pilot project areas. Leakage ratio (initial) will be set by August 2007 1-4 At least three (3) members of each UFW team of Zagazig City and Hihya Markaz acquire leakage detection survey techniques. 1-5 At least one (1) member of each UFW team of other Markazes related to the pilot project areas acquires leakage detection survey techniques.	
2. Operation and maintenance capacity of water supply facilities is strengthened.	2-1 Manuals for management of O&M are developed and updated.	2-1 Manuals for management of O&M and water quality control are developed and updated as SOPs by the following SOP packages (3) for plant components and for three activity categories, i.e. operation, maintenance and water quality control for each model facilities. - Not less than twenty (20) SOP packages at WTP - Not less than five (5) SOP packages at FMRP, BPS and well stations.	New Faqus WTP shall be handed over from NOPWASD to SHAPWASCO in due course.

Comparison between PDM0 and PDM1

Narrative Summary	Objectively Verifiable Indicators		Remarks
	PDM0	PDM1	
	2-2 The plan for the management of O&M is developed. 2-3 Level of applying knowledge and skills acquired through OJT	2-2 O&M Plan is developed at more than one (1) model WTP. 2-3 SOP/HQ and SOP/MF members acquire the ability to apply knowledge and skills of SOP. - More than eighty percent (80%) of them pass the paper and field operation tests prepared by JICA Experts. 2-4 Basic system drawings of the facilities are prepared and updated at five (5) model facilities (2 WTPs, 1 FMRP, 1BPS and 1 well station) which represent the facilities of SHAPWASCO. 2-5 For the application of SOPs to the field operation, class room training and OJT to the operators are conducted at all the five (5) model facilities. 2-6 Water quality control system applying the new HCWW regulation is prepared. 2-7 Well inventory is prepared with a standard form and the first round of investigation is conducted for all the SHAPWASCO well stations. 2-8 Hydraulic analysis is done for not less than two pilot project areas.	New Faqus WTP shall be handed over from NOPWASD to SHAPWASCO in due course.
	Note (1) Target areas for output 1 are the pilot project areas specified by the Project in Zagazig City, Zagazig Markaz, Hihya Markaz, Diarb Nigm Markaz and Ibrahimiya Markaz, respectively. (2) Specific indicators are selected from those in quarterly report to HCWW, such as the percentage of metered connections, the percentage of working meters, etc.	Note (1) Target areas for output 1 are the pilot project areas specified by the Project in Zagazig City, Zagazig Markaz, Hihya Markaz, Diarb Nigm Markaz and Ibrahimiya Markaz, respectively. Target areas for output 2 are all the water supply facilities except compact units. (2) Following PI has been selected as a specific indicator. - Percentage of measured water production (%), etc. (3) Plant component includes the plant processes such as intake, raw water pumps, sedimentation, etc. SOP package is a set of SOPs for operation, maintenance and water quality control activities of each plant component.	

Comparison between PDM0 and PDM1

Project Activities			
PDM0		**PDM1**	
1	**Unaccounted-for water (UFW) ratio is reduced in the pilot project areas.**	**1**	**Unaccounted-for water (UFW) ratio is reduced in the pilot project areas.**
1-1	Analyze the current situation on UFW and prepare an action plan for UFW reductions	**1-1**	**General**
1-2	Select pilot project areas	(1)	Analyzing the current situation on UFW
1-3	Organize UFW reduction teams	(2)	Selecting candidate areas for pilot project areas
1-4	Prepare pipe network drawings of the pilot project areas	(3)	Organizing UFW reduction teams
1-5	Survey actual conditions of UFW, analyze contents of UFW and measure UFW ratio in the pilot project area	(4)	Formulating an action plan for UFW reduction
1-6	Conduct on-the-job training for SHAPWASCO staff on leakage detection	(5)	Conducting water conservation campaign
1-7	Implement pipe repairing and commercial loss reduction programs	(6)	Formulating long-term pipe replacement plan for preventive works
1-8	Conduct public awareness campaign for water saving	(7)	Holding workshops and seminars
1-9	Conduct post-evaluation of UFW ratio	**1-2**	**Actions**
		U1	Conducting training of C/P staff at Mostrod Training Center
		U2	Conducting leakage (minimum night flow : MNF) survey for candidate areas
		U3	Determining six (6) pilot project areas
		U4	Preparing GIS drawings
		U5	Learning experiences of Jordan UFW reduction project
		U6	Making field survey of distribution network
		U7	Surveying installation conditions of water meters and conducting meter readings
		U8	Measuring metering error for working meters and water wastage in the house
		U9	Conducting MNF survey
		U10	Making water balance analysis before repair works
		U11	Conducting leakage detection survey
		U12	Repairing leaking parts
		U13	Conducting MNF survey (including meter readings) after repair works
		U14	Making water balance analysis after repair works and its evaluation

Comparison between PDM0 and PDM1

Project Activities			
PDM0		**PDM1**	
2	**Operation and maintenance capacity of water supply facilities is strengthened**	**2**	**Operation and maintenance capacity of water supply facilities is strengthened**
2-1	Survey current conditions of water supply facilities	**2-1**	**General**
2-2	Conduct monitoring of wells	(1)	Surveying current conditions of water supply facilities
2-3	Organize standard operational procedures (SOPs) team	(2)	Selecting Model Facilities (MF)
2-4	Establish the system for water quality control	(3)	Organizing SOP/HQ and SOP/MF teams
2-5	Establish the system to measure the quality of water production and transmission	(4)	Holding workshops and seminars
2-6	Study on optimum water distribution main with network hydraulic analysis and plan district-metering-zone (DMZ)	**2-2**	**Actions**
2-7	Prepare SOPs for WTP, Fe/Mn removal plants and pumping stations	S1	Preparing basic system drawings
2-8	Prepare textbooks for SOPs training	S2	Preparing unified forms of O&M records and reports
2-9	Conduct on-the-job training for SHAPWASCO staff on SOPs	S3	Measuring intake / production water volume at 7 WTPs
2-10	Conduct workshop / seminars for SOPs	S4	Developing SOPs for model facilities
2-11	Monitor the performance indicator regarding operation and maintenance and achievement level of staff performance	S5	Examining water distribution control practice in the network
			S5-1 Pilot project for distribution control in small areas
			S5-2 Hydraulic analysis of water supply and distribution
		S6	Applying SOPs in O&M
		S7	Developing SOPs for the remaining facilities
		S8	Formulating O&M plans
		S9	Developing water quality control program
		S10	Developing well inventory forms and monitoring well stations
		2-3	**Monitoring achievement for SOP**

Abbreviations:

O&M : Maintenance and operation
BPS : Booster pumping station
SHAPWASCO : Sharkia Potable Water and Sanitation Company
FMRP : Fe/Mn removal plant
MF : Model facilities
WTP : Water treatment plant
HQ : Headquarters
NOPWASD : National Organization for Potable Water and Sanitary Drainage
OJT : On-the-job training
SOP : Standard Operational Procedure

3　第３回合同調整委員会議事録

MINUTES OF MEETING
BETWEEN THE MID-TERM MONITORING TEAM AND AUTHORITIES CONCERNED OF THE GOVERNMENT OF THE ARAB REPUBLIC OF EGYPT, AND

MINUTES OF MEETING
ON
THE THIRD JOINT COORDINATION COMMITTEE

FOR
THE PROJECT FOR IMPROVEMENT OF MANAGEMENT CAPACITY OF OPERATION AND MAINTENANCE FOR SHAPWASCO IN THE ARAB REPULIC OF EGYPT

The Mid-Term Monitoring Study Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") visited the Arab Republic of Egypt from 27th February to 6th March 2008 for confirming the progress of activities and the achievement of project purpose on the Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO (hereinafter referred to as "the Project").

During its stay in Egypt, the Team carried out site survey on the ground and exchanged ideas on the progress of the Project with SHAPWASCO and JICA expert team (hereinafter referred to as "the Expert Team").

The Team, SHAPWASCO as the counterpart and the Expert Team had a series of discussions and came to understanding concerning the matters referred to in the part I of the document attached hereto.

At the same time, the third Joint Coordination Committee (hereinafter referred to as "JCC") for the Project was held on 4th of March 2008 in Cairo. On this occasion, the Team reported the result of discussions mentioned above to the committee members, and the Expert Team headed by Mr. Masahiro Takeuchi, Chief Advisor of the Project, proposed Project Design Matrix-2 (PDM2) and Plan of Operation-2 (PO2) as the second revision of the original

PDM0 and PO0 that were agreed between the Egyptian side and the Japanese side on 13th of June 2006.

With the explanation of the revision by the Expert Team, JCC has approved the proposed PDM2 and PO2. The main points revised from PDM1 and PO1 to PDM2 and PO2 are referred to in the part II of the document attached hereto.

Cairo, 4th of March 2008

S. Bayoumi

Dr. Salah Bayoumi
Chairman
Sharkia Potable Water and Sanitation Company (SHAPWASCO)

Mr. Hiroshi Shiono
Leader
The Mid-Term Monitoring Study Team, JICA

Prof. Dr. Abdel Kawi Khalifa
Chairman
Holding Company for Water and Wastewater (HCWW)

Mr. Masahiro Takeuchi
Chief Advisor
The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO, JICA

THE ATTACHED DOCUMENT

PART I

1. Staff allocation

In accordance with the fact that the responsibility of operation and maintenance work for water treatment plants in Sharkia Governorate has been completely transferred to SHAPWASCO since January 2008; however four water treatment plants are still operated by contactors, the Team requested SHAPWASCO to post necessary staff in order to make it sure that these water treatment plants be properly operated particularly after the contractors finish their work. In addition to that, the Team requested additional UFW/HQ team member(s) and AutoCAD operator should be placed in the headquarters to carry out SOPs activities.

In response to the requests, SHAPWASCO stated that necessary staff should be allocated to avoid problems associated with operation and maintenance work as well as SOPs.

2. Supervision of construction worker

Through site surveys on UFW reduction activities, the Team noticed that branching works of installing house connection done by small contractors/plumbers might cause leakage problems due to lack of skills. Therefore, the Team suggested that providing training for such small contractors/plumbers could improve the quality of construction works that contributes to decreasing leakage points.

SHPWASCO understood the situation and proposed to have water conservation campaign include workshop for plumbers.

3. Objectively verifiable indicators for project purpose

The Team, SHAPWASCO and the Expert Team agreed that the current indicators for project purpose were not specified and needed how to be calculated for the coming final evaluation on the Project.

In this context, the modified indicators were crafted and proposed by the Expert Team in PDM2 (ANNEX 2).

4. UFW pilot project site

Referring to the Minutes of Meetings agreed between both the Egyptian side and the Japanese side on 13th June, 2006, SHAPWASCO requested that the pilot projects be implemented in Menia Alqamah Markaz, Bilbais Markaz and Abu Hamad Markaz. SHAPWASCO explained that the existing UFW Headquarters Team should play a key role to develop UFW activities throughout the Sharkia Governorate, and is required to build their capacity of planning and management of UFW activities in the Markaz level. In other words, the UFW Headquarters Team will face this new challenge of managing UFW activities.

Therefore, the UFW Headquarters Team needs more opportunities to experience such planning and management works with the support of the Expert Team, which allow them to take a lead of disseminating UFW activities in the future.

Considering the situation facing SHAPWASCO, the Team understood the necessity and impact of such extension. At the same time, the Team confirmed that the progress of UFW activity in the Project has gone well according to Plan of Operation, and did not find any major constraints associated with personnel and budget that SHAPWASCO should prepare.

In this context, the Team stated that the request had to be considered by JICA headquarters and the result of the consideration would be informed SHAPWASCO through JICA Egypt Office.

5. Planning of UFW reduction activities

Both the Egyptian side and the Japanese side agreed that formulating a plan of disseminating UFW reduction activities should be added as one of the Project activities.

PART II

1. Revision of PDM

The Expert Team explained to the JCC committee members the main revisions in PDM2 from PDM1 as follows:

(1) Objectively Verifiable Indicators for "Project Purpose" were revised as follows:

Item 2 (added)

Setting indicators for optimum electricity and chemicals consumption and manpower standard working hours is conducted at model facilities for SOP activity.

Item 3 (previous item 2 in PDM1)

The objectively verifiable indicator as previous item 2 was changed to item-3 and subdivided into the following two (2) items:

- Activities on UFW reduction are expanded to other sites than the pilot project sites.
- Activities on SOPs are expanded to other facilities than the model facilities.

(2) Objectively Verifiable Indicators for Output-1 (Unaccounted-for water (UFW) ratio is reduced in the pilot project sites) were revised.

Targets for the reduction of UFW ratio and leakage (real loss) ratio have been set after the completion of Pilot Project-1 in Zagazig City-East as follows provided that those ratios might be reviewed in June 2008:

Item 1-2

An average UFW ratio (initial) is reduced from 35% to 20% in the pilot project sites.

Item 1-3

An average leakage (real loss) ratio (initial) is reduced from 30% to 15% in the pilot project sites.

(3) Following activity was added in "1-1 General" for UFW reduction activity for achieving the Output-1:

Item (7)

Formulating a plan for expanding UFW reduction activity to other Markazes than the pilot project areas

(4) A pilot project area means Zagazig city or Markazes where a pilot project is conducted and a pilot project site means the site where a pilot project is conducted. Based on this definition, the related wordings in PDM2 were revised.

2. Revision of PO

The Expert Team explained to the JCC committee members the main revisions in PO2 from PO1 as follows:

(1) Following activity was added in "1-1 General" for UFW reduction activity:
As item (7)

Formulating a plan for expanding UFW reduction activity to the other Markazes than the pilot project areas

(2) A pilot project area means Zagazig city or Markazes where a pilot project is conducted and a pilot project site means the site where a pilot project is conducted. Based on this definition, the related wordings in PDM2 were revised.

ANNEX 1: List of Participants in JCC

ANNEX 2: Project Design Matrix-2 (PDM2)

ANNEX 3: Plan of Operation-2 (PO2) for UFW Reduction Activity

ANNEX 4: Plan of Operation-2 (PO2) for SOP Activity

ANNEX 1

List of Participants

[Egyptian side]

Prof. Dr. Abdel Kawi Khalifa	Chairman of HCWW
Mr. El Sayed Naser	Vice Chairman of HCWW
Mr. Mamdouh Raslan	Vice Chairman of HCWW
Dr. Salah Bayoumi	Chairman of SHAPWASCO
	Representative of NOPWASD

[Japanese side]

JICA Mid-Term Monitoring Study Team

Mr. Hiroshi Shiono	Leader
Mr. Yoshiki Omura	Water supply development
Mr. Hiromu Matsuda	Water supply management
Mr. Tsuyoshi Kanda	Study planning

JICA Expert Team

Mr. Masahiro Takeuchi	Chief advisor/water supply planning
Mr. Masatoshi Seno	Unaccounted-for water
Mr. Keizo Kimura	Water treatment/mechanical equipment
Dr. Ashraf Ahamed	Electrical equipment
Mr. Nobuyuki Iijima	Hydrogeology
Mr. Mitsuhito Omori	Coordinator of the project
Mr. Mohamed Nagi	Facilitator of the project team
Dr. Mohamed Sobhy	Senior engineer for UFW reduction activity
Mr. Mohamed Khalaf	Senior engineer for SOP activity

JICA Egypt Office

Mr. Katsuhiko Ozawa	Resident representative
Mr. Kenshiro Tanaka	Assistant resident representative

Project Design Matrix-2 (PDM2)

Project Title: The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO

Target Area : Sharkia Governorate, Egypt **Target Group : Staff of SHAPWASCO** **Duration : FY2006 – FY2009**
Final Beneficiaries : People in Sharkia Governorate **Date : March 4, 2008**

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
[Overall Goal] Management capacity of operation and maintenance of water supply facilities is improved in Sharkia Governorate.	1. Performance indicators in the field of management capacity of operation and maintenance are improved for all branches in the Governorate.	SHAPWASCO quarterly report submitted to HCWW	
[Project Purpose] Management capacity of operation and maintenance of water supply facilities is improved in target areas.	1. Performance indicators in the field of management capacity of operation and maintenance are improved in target areas. 2. Setting indicators for optimum electricity and chemical consumption and standard working hours is conducted at model facilities for SOP activity. 3. Activities on UFW and SOPs are incorporated into the routine work. - Activities on UFW reduction are expanded to other sites than the pilot project sites. - Activities on SOPs are expanded to other facilities than the model facilities.	SHAPWASCO quarterly report submitted to HCWW Monthly Report for O&M Project Progress Report Monthly Report for O&M Project Progress Report Questionnaire survey Organization chart	Sector policy of the Egyptian government will not drastically change on management of water supply services.
[Outputs] 1. Unaccounted-for water (UFW) ratio is reduced in the pilot project sites.	1-1 Water balance analysis can be conducted properly for the pilot project sites. 1-2 An average UFW ratio (initial) is reduced from 35% to 20% in the pilot project sites. 1-3 An average leakage (real loss) ratio (initial) is reduced from 30% to 15% in the pilot project sites. 1-4 At least three (3) members of each UFW team of Zagazig City and Hihya Markaz acquire leakage detection survey technique. 1-5 At least one (1) member of each UFW team of other Markazes related to the pilot projects acquires leakage detection survey technique.	Project Progress Report Project Progress Report Project Progress Report Test by JICA Expert Project Progress Report Test by JICA Expert Project Progress Report	

A3-8

ANNEX 2 (1/4)

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
2. Operation and maintenance capacity of water supply facilities is strengthened.	2-1 Basic system drawings of the facilities are prepared and updated at five (5) model facilities (2 WTPs, 1 FMRP, 1 BPS and 1 well station) which represent the facilities of SHAPWASCO.	Project Progress Report	
	2-2 Manuals for management of O&M are developed and updated as SOPs by the following SOP packages for plant components and for three activity categories, i.e. Operation, Maintenance and Water Quality Control for each model facility. - Not less than twenty (20) SOP packages at WTP - Not less than five (5) SOP packages at FMRP, BPS and well stations.	Project Progress Report	
	2-3 For the application of SOPs to the field operation, class room training and OJT to operators are conducted at all the five (5) model facilities.	Project Progress Report	
	2-4 Not less than eighty (80) percent of SOP/HQ and SOP/MF members acquire the ability to apply knowledge and skills of SOP.	Test by JICA Expert Project Progress Report	
	2-5 O&M Plan is developed at not less than one (1) WTP.	Project Progress Report	
	2-6 Water quality control program applying the new HCWW regulation is prepared.	Project Progress Report	
	2-7 Well inventory is prepared with a standard form and the first round of investigation is conducted for all the SHAPWASCO well stations.	Project Progress Report	
	2-8 Hydraulic analysis is done for not less than two pilot project areas.	Project Progress Report	

Note (1) Following PI has been selected as a specific indicator.
- Percentage of measured water production (%), etc.
Volume of measured production water / total volume of produced water
Volume of measured production water: means total volume of measured produced water in stations equipped with meters working in cubic meter

A3-9

ANNEX-2 (2/4)

Activities	Inputs		Important Assumption
	Japanese Side	Egyptian Side	
1 Unaccounted-for water (UFW) ratio is reduced in the pilot project sites.	1. Experts	1. Counterparts	Employees who received trainings by the Project will continuously work for SHAPWASCO.
1-1 General	- Chief Advisor	- Project director	
(1) Analyzing the current situation on UFW	- UFW reduction specialist	- Project manager	
(2) Organizing UFW reduction teams	- Leakage detection trainer	- UFW teams	
(3) Selecting candidate areas for pilot project sites	- Water treatment specialist		
(4) Formulating an action plan for UFW reduction activity	- Hydraulic engineer for network analysis		
(5) Conducting water conservation campaign	- Electrical engineer		Personnel transfer of executive management will not affect the implementation of the Project.
(6) Formulating long-term pipe replacement plan for preventive works	- Mechanical engineer		
(7) Formulating a plan for expanding UFW reduction activity to the other Markazes than the pilot project areas	- Hydro-geologist	2. Office space and facilities for experts	
(8) Holding workshops and seminars	- Water quality control specialist	3. Equipment	
1-2 Actions	2. Equipment and materials	4. Necessary information	
U1 Conducting training of C/P staff at Mostrod Training Center	3. Trainings	5. Local cost All the cost for repairing leakage in distribution network of the pilot project areas	Funds from NOPWASD and SHAPWASCO in related to the Project will be allocated as planned.
U2 Conducting leakage (minimum night flow : MNF) survey for candidate areas	4. Local cost		
U3 Determining nine (9) pilot project sites			
U4 Preparing GIS drawings		6. Others	
U5 Learning experiences of Jordan UFW reduction project		- Civil works, electrical works and other necessary works for the installation of flow meters	
U6 Making field survey of distribution network		- Measurement of flow rate by the flow meters	
U7 Surveying working conditions of water meters and conducting meter readings		- Monitoring of wells	
U8 Measuring metering error for working meters and water wastage in the house		- MNF survey and countermeasure works for other areas than the pilot project areas	
U9 Conducting MNF survey			
U10 Making water balance analysis before repair works			
U11 Conducting leakage detection survey			
U12 Repairing leaking parts			
U13 Conducting MNF survey (including meter readings) after repair works			
U14 Making water balance analysis after repair works and its evaluation			

A3-10

Activities		Inputs		Important Assumption
		Japanese Side	Egyptian Side	
2	**Operation and maintenance capacity of water supply facilities is strengthened**			
2-1	**General**			
(1)	Surveying current conditions of water supply facilities			
(2)	Selecting Model Facilities (MF)			
(3)	Organizing SOP/MF teams			
(4)	Formulating an action plan for SOP activity			
(5)	Holding workshops and seminars			
2-2	**Actions**			
S1	Preparing basic system drawings			
S2	Preparing unified forms of O&M records and reports			
S3	Measuring intake / production water volume at seven (7) WTPs			
S4	Developing SOPs for model facilities			
S5	Examining water distribution control practice in the network			
	S5-1 Pilot project for distribution control in small areas			
	S5-2 Hydraulic analysis of water supply and distribution			**Pre-Conditions**
S6	Applying SOPs in O&M			
S7	Developing SOPs for the remaining facilities			
S8	Formulating O&M plans			
S9	Developing water quality control program			
S10	Developing well inventory forms and monitoring wells			
2-3	**Monitoring achievement of SOP**			

Abbreviations:

O&M : Maintenance and operation
BPS : Booster pumping station
HCWW : Holding Company for Water and Wastewater
SHAPWASCO : Sharkia Potable Water and Sanitation Company
FMRP : Fe/Mn removal plant
MF : Model facilities
WTP : Water treatment plant
HQ : Headquarters
NOPWASD : National Organization for Potable Water and Sanitary Drainage
OJT : On-the-job training
SOP : Standard Operational Procedure

A3-11

ANNEX-2 (4/4)

Plan of Operation-2 (PO2) for UFW Reduction Activity

Project Name : The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO

Duration : November 2006 - October 2009 (3 years)

	Item	2006	2007											2008											2009									
		Phase-1					Phase-2										Phase-3												Phase-4							
		11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
1	**Unaccounted-for water (UFW) ratio is reduced in the pilot project areas.**																																				
1-1	**General**																																				
(1)	Analysing the current situation on UFW																																				
(2)	Organizing UFW teams at HQ, Zagazig City and all the markazes																																				
(3)	Selecting candidate areas for pilot project sites																																				
(4)	Formulating an action plan for UFW reduction activity																																				
(5)	Conducting water conservation campaign																																				
(6)	Formulating and executing long-term pipe replacement plan for preventive works																																				
(7)	Formulating a plan for expanding UFW reduction activity to other Markazes than the pilot project areas																																				
(8)	Holding Workshops and Seminars																																				
1-2	**Actions**																																				
Action U1	Conducting training of C/P staff at Mostorod Traing Center																																				
Action U2	Conducting leakage (MNF) survey for candidate areas																																				
Action U3	Determining six (6) pilot project sites																																				
Action U4	Preparing GIS drawings																																				
Action U5	Learning experiences of Jordan UFW reduction project																																				
Action U6 & U7	Making field survey of distribution network (Action U6) / Surveying installatio conditions of water meters and conducting meter readings (Action U7																																				
Action U8	Measuring metering error for working meters and water wastage in the house																																				
Action U9 & U10	Conducting leakage (MNF) survey (Action U9) / Making water balance analysis befor repair works (Action U10)																																				
Action U11	Conducting leakage detection survey																																				
Action U12	Repairing leaking parts																																				
Action U13	Conducting leakage survey (including meter readings) after repair works																																				
Action U14	Making water balance analysis after repair works and its evaluation																																				

A3-12

Plan of Operation-2 (PO2) for SOP Activity

Project Name : The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO

Duration : November 2006 - October 2009 (3 years)

	Item	2006		2007												2008												2009							
				Phase-1					Phase-2										Phase-3											Phase-4							
		11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
2	**Operation and maintenance capacity of water supply facilities is strengthened.**																																				
2-1	**General**																												▼ Open Workshop								
(1)	Surveying the current conditions of water supply facilities																												◆ Open Seminar								
(2)	Selecting Model Facilities (MF)																																				
(3)	Organizing SOP/MF teams																																				
(4)	Formulating an action plan for SOP activity																																				
(5)	Holding Workshops and Seminars								◆					▼				◆							▼				▼			◆					
2-2	**Actions**																																				
Action S1	Preparing basic system drawings																																				
Action S2	Preparing unified forms of O&M records and reports																																				
Action S3	Measuring intake / production water volume at seven (7) WTPs																																				
Action S4	Developing SOPs for Model Facilities																																				
Action S5	Examining water distribution control practice in the network																																				
S5-1	Pilot project for distribution control in small areas																																				
S5-2	Hydraulic analysis of water supply and distribution																																				
Action S6	Applying SOPs in O&M																																				
Action S7	Developing SOPs for the remaining facilities																																				
Action S8	Formulating O&M plans																																				
Action S9	Developing water quality control program																																				
Action S10	Developing well inventory forms and monitoring wells																																				
2-3	**Monitoring achievement for SOP**																																				

A3-13

ANNEX-4

4　第４回合同調整委員会議事録

Minutes of Meeting
on
The Fourth Joint Coordination Committee
for
The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO in the Arab Republic of Egypt

Cairo, 10th July 2008

Dr. Salah Bayoumi
Chairman
Sharkiya Potable Water and Sanitation Company (SHAPWASCO)

Mr. Masahiro Takeuchi
Chief Advisor
The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO
JICA

Prof. Dr. Abdel Kawi Khalifa
Chairman
Holding Company for Water and Wastewater (HCWW)

In the course of Phase-3 of the Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO (hereinafter referred to as "the Project"), the fourth meeting for Joint Coordination Committee (hereinafter referred to as "JCC") for the Project was held on 10th July 2008 in Cairo.

The Japanese expert team headed by Mr. Masahiro Takeuchi, Chief Advisor of the Project, presented Project Design Matrix-3 (PDM3) and Plan of Operation-3 (PO3) as attached which are the third revision of PDM0 and PO0 confirmed between the Egyptian side and the Japanese side on 13th June 2006.

The team explained the contents of PDM3 and PO3 to the committee members. After discussions, PDM3 and PO3 have been approved by the committee.

Attachments

1. Project Design Matrix-3 (PDM3)
2. Plan of Operation-3 (PO3) for UFW Reduction Activity
3. Plan of Operation-3 (PO3) for SOP Activity

Annex

List of Participant

[Egyptian side]

Holding Company for Water & Wastewater (HCWW)

Prof. Dr. Abdel Kawi Khalifa	Chairman
Mr. Mamdouh Raslan	Vice Chairman
Mr. El Sayed Nasr	Vice Chairman

Sharkia Potable Water and Sanitation Company (SHAPWASCO)

Dr. Salah Bayoumi	Chairman

[Japanese side]

JICA Expert Team

Mr. Masahiro Takeuchi	Expert for Water supply Planning/Chief Advisor
Mr. Akihiko Okazaki	Expert for Leakage Detection
Mr. Keizo Kimura	Expert for Water Treatment/Mechanical Equipment
Mr. Mohamed Nagi	Facilitator of the Project Team
Dr. Mohamed Sobhy	Senior Engineer for UFW Reduction Activity
Mr. Mohamed Khalaf	Senior Engineer for SOP Activity

JICA Egypt Office

Mr. Tetsuo Takahashi	Assistant Resident Representative
Mr. Nour El-Din Hussein	Project Officer

Project Design Matrix-3 (PDM3)

Project Title: The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO

Target Area : Sharkia Governorate, Egypt | **Target Group : Staff of SHAPWASCO** | **Final Beneficiaries : People in Sharkia Governorate** | **Duration : FY2006 – FY2009** | **Date : 9th July 2008**

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
[Overall Goal] Management capacity of operation and maintenance of water supply facilities is improved in Sharkia Governorate.	1. Performance indicators in the field of management capacity of operation and maintenance are improved for all branches in the Governorate.	SHAPWASCO quarterly report submitted to HCWW	
[Project Purpose] Management capacity of operation and maintenance of water supply facilities is improved in target areas.	1. Performance indicators in the field of management capacity of operation and maintenance are improved in target areas. 2. Setting indicators for optimum electricity and chemical consumption and manpower standard working hours is conducted at model facilities for SOP activity. 3. Activities on UFW and SOPs are incorporated into the routine work. - Activities on UFW reduction are expanded to other sites than the pilot project sites. - Activities on SOPs are expanded to other facilities than the model facilities.	SHAPWASCO quarterly report submitted to HCWW Monthly Report for O&M Project Progress Report Monthly Report for O&M Project Progress Report Questionnaire survey Organization chart	Sector policy of the Egyptian government will not drastically change on management of water supply services.
[Outputs] 1. Unaccounted-for water (UFW) ratio is reduced in the pilot project sites.	1-1 Water balance analysis can be conducted properly for the pilot project sites. 1-2 An average UFW ratio (initial) is reduced by 13 points in the pilot project sites. 1-3 An average leakage (real loss) ratio (initial) is reduced by 13 points in the pilot project sites. 1-4 At least three (3) members of each UFW team of Zagazig City and Hihya Markaz acquire leakage detection survey technique. 1-5 At least one (1) member of each UFW team of other Markazes related to the pilot projects acquires leakage detection survey technique.	Project Progress Report Project Progress Report Project Progress Report Test by JICA Expert Project Progress Report Test by JICA Expert Project Progress Report	

Attachment-1

Narrative Summary	Objectively Verifiable Indicators	Means of Verification	Important Assumption
2. Operation and maintenance capacity of water supply facilities is strengthened.	2-1 Basic system drawings of the facilities are prepared and updated at five (5) model facilities (2 WTPs, 1 FMRP, 1 BPS and 1 well station) which represent the facilities of SHAPWASCO.	Project Progress Report	
	2-2 Manuals for management of O&M are developed and updated as SOPs by the following SOP packages for plant components and for three activity categories, i.e. Operation, Maintenance and Water Quality Control for each model facility. - Not less than twenty (20) SOP packages at WTP - Not less than five (5) SOP packages at FMRP, BPS and well stations.	Project Progress Report	
	2-3 For the application of SOPs to the field operation, class room training and OJT to operators are conducted at all the five (5) model facilities.	Project Progress Report	
	2-4 Not less than eighty (80) percent of SOP/HQ and SOP/MF members acquire the ability to apply knowledge and skills of SOP.	Test by JICA Expert Project Progress Report	
	2-5 O&M Plan is developed at not less than one (1) WTP.	Project Progress Report	
	2-6 Water quality control program applying the new HCWW regulation is prepared.	Project Progress Report	
	2-7 Well inventory is prepared with a standard form and the first round of investigation is conducted for all the SHAPWASCO well stations.	Project Progress Report	
	2-8 Hydraulic analysis is done for not less than two pilot project areas.	Project Progress Report	

Note (1) Following PI has been selected as a specific indicator.
- Percentage of measured water production (%), etc.
Volume of measured production water / total volume of produced water
Volume of measured production water: means total volume of measured produced water in stations equipped with meters working in cubic meter

Activities	Inputs		Important Assumption
	Japanese Side	Egyptian Side	
1 Unaccounted-for water (UFW) ratio is reduced in the pilot project sites.	1. Experts	1. Counterparts	Employees who received trainings by the Project will continuously work for SHAPWASCO.
1-1 General	- Chief Advisor	- Project director	
(1) Analyzing the current situation on UFW	- UFW reduction specialist	- Project manager	
(2) Organizing UFW reduction teams	- Leakage detection trainer	- UFW teams	
(3) Selecting candidate areas for pilot project sites	- Water treatment specialist	- SOP teams	
(4) Formulating an action plan for UFW reduction activity	- Hydraulic engineer for network analysis		
(5) Conducting water conservation campaign	- Electrical engineer		Personnel transfer of executive management will not affect the implementation of the Project.
(6) Formulating long-term pipe replacement plan for preventive works	- Mechanical engineer		
(7) Formulating a plan for expanding UFW reduction activity to the other Markazes than the pilot project areas	- Hydro-geologist	2. Office space and facilities for experts	
(8) Holding workshops and seminars	- Water quality control specialist	3. Equipment	
1-2 Actions	2. Equipment and materials	4. Necessary information	
U1 Conducting training of C/P staff at Mostrod Training Center	3. Trainings	5. Local cost All the cost for repairing leakage in distribution network of the pilot project areas	Funds from NOPWASD and SHAPWASCO in related to the Project will be allocated as planned.
U2 Conducting leakage (minimum night flow : MNF) survey for candidate sites	4. Local cost		
U3 Determining nine (9) pilot project sites			
U4 Preparing GIS drawings		6. Others	
U5 Learning experiences of Jordan UFW reduction project		- Civil works, electrical works and other necessary works for the installation of flow meters	
U6 Making field survey of distribution network		- Measurement of flow rate by the flow meters	
U7 Surveying working conditions of water meters and conducting meter readings		- Monitoring of wells	
U8 Measuring metering error for working meters and water wastage in the house		- MNF survey and countermeasure works for other areas than the pilot project areas	
U9 Conducting MNF survey			
U10 Making water balance analysis before repair works			
U11 Conducting leakage detection survey			
U12 Repairing leaking parts			
U13 Conducting MNF survey (including meter readings) after repair works			
U14 Making water balance analysis after repair works and its evaluation			

A4-6

Attachment-1

Activities	Inputs		Important Assumption
	Japanese Side	Egyptian Side	
2 **Operation and maintenance capacity of water supply facilities is strengthened**			
2-1 General			
(1) Surveying current conditions of water supply facilities			
(2) Selecting Model Facilities (MF)			
(3) Organizing SOP/MF teams			
(4) Formulating an action plan for SOP activity			
(5) Holding workshops and seminars			
2-2 Actions			
S1 Preparing basic system drawings			
S2 Preparing unified forms of O&M records and reports			
S3 Measuring intake / production water volume at seven (7) WTPs			
S4 Developing SOPs for model facilities			
S5 Examining water distribution control practice in the network			
S5-1 Pilot project for distribution control in small areas			
S5-2 Hydraulic analysis of water supply and distribution			**Pre-Conditions**
S6 Applying SOPs in O&M			
S7 Developing SOPs for the remaining facilities			
S8 Formulating O&M plans			
S9 Developing water quality control program			
S10 Developing well inventory forms and monitoring wells			
2-3 Monitoring achievement of SOP			

Abbreviations:

O&M : Maintenance and operation
BPS : Booster pumping station
HCWW : Holding Company for Water and Wastewater
SHAPWASCO : Sharkia Potable Water and Sanitation Company
FMRP : Fe/Mn removal plant
MF : Model facilities
WTP : Water treatment plant
HQ : Headquarters
NOPWASD : National Organization for Potable Water and Sanitary Drainage
OJT : On-the-job training
SOP : Standard Operational Procedure

Attachment-1

Plan of Operation-3 (PO3) for UFW Reduction Activity

Project Name : The Project for Improvement of Management Capacity of Operation and Maintenance for SIIAPWASCO

Duration : November 2006 - October 2009 (3 years)

	Item	2006	2007											2008											2009									
		Phase-1					Phase-2										Phase-3											Phase-4								
		11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
1	**Unaccounted-for water (UFW) ratio is reduced in the pilot project areas.**																																				
1-1	**General**																																				
(1)	Analysing the current situation on UFW																																				
(2)	Selecting candidate areas for pilot project sites						P1~P6															P7~P9														
(3)	Organizing UFW reduction teams																																				
(4)	Formulation an action plan for UFW reduction																																				
(5)	Conducting water conservation campaign																																				
(6)	Formulating long-term pipe replacement plan for preventive works																																				
(7)	Formulating a paln for expanding UFW reduction activity to the other Markazes than the pilot project areas																																				
(8)	Holding Workshops and Seminars								◆					▼				◆								▼				▼			◆				
1-2	**Actions**																																				
Action U1	Conducting training of C/P staff at Mostorod Traing Center							■															■														
Action U2	Conducting leakage (MNF) survey for candidate sites							■	■		P1~P6											P7	■		P8	■		P9	■								
Action U3	Determining nine (9) pilot project sites								■	■													■			■			■								
Action U4	Preparing GIS drawings							P1			P2			P3			P4			P5			P6														
								■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
Action U5	Learning experiences of Jordan UFW reduction project								■													P7			P8			P9								
Action U6 & U7	Making field survey of distribution network (Action U6) / Surveying working conditions of water meters and conducting meter readings (Action U7)									P1			P2			P3			P4		P5		P6			P8		P9								
Action U8	Measuring metering error for working meters and water wastage in the house									■			■			■			■		■		P7			■			■								
Action U9 & U10	Conducting leakage (MNF) survey (Action U9) / Making water balance analysis before repair works (Action U10)									■			□			■			□		■		□			■			■								
Action U11	Conducting leakage detection survey									■			□			■			□		■					■			■								
Action U12	Repairing leaking parts										■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■							
Action U13	Conducting leakage survey (including meter readings) after repair works												■			□			■		■					■			■								
Action U14	Making water balance analysis after repair works and its evaluation												□			□			■		■					■			■								

▼ Open Workshop
◆ Open Seminar

P1, P3 & P5 : Pilot Project Area-1
P2, P4 & P6 : Pilot Project Area-2
P7, P8 & P9 : Pilot Project Area-3

Pilot Project Areas : P1=Zagazig City/East, P2=Hihya Markaz, P3=Zagazig City/West, P4=Zagazig Markaz, P5=Ibrahimiya Markaz, P6=Diarb Nigm, P7=Abu Hamad Markaz, P8=Menia Alqamah Markaz, P9=Bilbais Markaz

A4-8

Attachment-2

Plan of Operation-3 (PO3) for SOP Activity

Project Name : The Project for Improvement of Management Capacity of Operation and Maintenance for SHAPWASCO

Duration : November 2006 - October 2009 (3 years)

Item		2006		2007										2008										2009									
		Phase-1					Phase-2										Phase-3											Phase-4						
		11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10
2	**Operation and maintenance capacity of water supply facilities is strengthened.**																																				
2-1	**General**																																				
(1)	Surveying the current conditions of water supply facilities																																				
(2)	Selecting Model Facilities (MF)																																				
(3)	Organizing SOP/MF teams																																				
(4)	Formulating an action plan for SOP activity																																				
(5)	Holding Workshops and Seminars								◆					▼			◆										▼			▼			◆				
2-2	**Actions**																																				
Action S1	Preparing basic system drawings																																				
Action S2	Preparing unified forms of O&M records and reports																																				
Action S3	Measuring intake / production water volume at seven (7) WTPs																																				
Action S4	Developing SOPs for Model Facilities																																				
Action S5	Examining water distribution control practice in the network																																				
S5-1	Pilot project for distribution control in small areas																																				
S5-2	Hydraulic analysis of water supply and distribution																																				
Action S6	Applying SOPs in O&M																																				
Action S7	Developing SOPs for the remaining facilities																																				
Action S8	Formulating O&M plans																																				
Action S9	Developing water quality control program																																				
Action S10	Developing well inventory forms and monitoring wells																																				
2-3	**Monitoring achievement for SOP**																																				

▼ Open Workshop
◆ Open Seminar

A4-9

Attachment-3