



شركة العين للتوزيع
Al Ain Distribution Company

**Asset Management Directorate
Operating Procedure
For**

**Handover of Distribution Network
Assets (Electricity & Water)**

OP.AM/AID.09

Effective Date : 22/02/2015

Procedure # OP.AM/AID.09

Issue : 1

Révision : 0

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Approved by:

Managing Director



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**HANDOVER OF DISTRIBUTION NETWORK ASSETS
(ELECTRICITY & WATER)**

Prepared by:

Asset Information Department Manager

Reviewed by:

Asset Management Director

Endorsed by:

Executive Operations Director

Approved by:

Managing Director

Issued by:

Integrated Management System Representative

Effective Date: 22 /02 / 2015



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AMENDMENTS SHEET

ISSUE/ REV. #	PAGE NUMBER	SUBJECT OF THE AMENDMENT	APPROVED BY SIGNATURE	DATE



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1. PURPOSE

The purpose of this procedure is to formulate detailed procedure for Handing Over of assets developed by any firm other than Al Ain Distribution Company (AADC) to (AADC) for future Operation and Maintenance (O&M) by AADC.

2. SCOPE

This procedure applies to all distribution infrastructure assets established by the developers to feed all customers within the identified development and to be handed over to AADC for future O&M.

3. DEFINITIONS / TERMINOLOGY

Developer	Firm responsible for the development and undertaking the infrastructure development
Development	Electricity/ Water Asset that had been developed by third party and eventually transferred to AADC, Approved by ADWEA.
ADWEA	Abu Dhabi Water and Electricity Authority
AADC	Al Ain Distribution Company
TRANSCO	Abu Dhabi Transmission & Dispatch Company
DISCOs	Distribution Companies
As Built Documents	Design Document / Material submittal/Construction Drawings approved by AADC. All Factory Acceptance Test (FAT) certificates/ Approved method statement and Site Acceptance Test (SAT) certificates O&M Manuals for equipment / System
Standards/Specifications	ADWEA / AADC Specifications and Standard practices
EO&MD	Electricity Operation and Maintenance Directorate
WO&MD	Water Operation and Maintenance Directorate



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AMD	Asset Management Directorate
PRJD	Projects Delivery Division
CSD	Customer Services Directorate
SD	Supply Department
FAC	Final Acceptance Certificate
PAC	Provisional Acceptance Certificate
PU	Package Unit
RMU	Ring Main Unit
DMS	Distribution Management System
SLD	Single Line Diagram
BOQ	Bill of Quantity
GIS	Geographic Information System
CAD	Computer-Aided Design
ETAP	Electrical Transient and Analysis Program
ASPEN	Relay Data Base Software
CT/VT	Current Transformer / Voltage Transformer
CB	Circuit Breaker
RTU	Remote Terminal Unit
SCMS	Substation Control and Monitoring System
TPD	Town Planning Department
MDF	Main Distribution Frame (Interface panel)
PLC	Programmable Logic Controller
SRV	Store Return Voucher



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FAT	Factory Acceptance Tests
SAT	Site Acceptance Tests
ASTS	ADWEA Standard Technical Specifications
LVAC	Low Voltage Alternative Current
PQ	Pre-Qualifications

4. REFERENCES

- 4.1 Policy on Asset Handover to DISCOs for Ownership, Operation & Maintenance (Electricity & Water)- AADC-AMD-P-AH-01 dated 07/01/2013.
- 4.2 Executive Counsel Letter number 12 dated in 05/08/2014, regarding the agreements with third parties.

5. RESPONSIBILITIES

It shall be the responsibility of the following in taking over the assets:

Item	Responsibility	Support
Assets Verification	AMD	PRJD / EO&MD / CSD / WO&MD
Site Verification	PRJD	Committee involve representatives from AMD, EO&MD, WO&MD, CSD and PRJD

Note: AADC's appointed consultant will coordinate among departments within AADC and the developers.



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Documents/ Software Required:

Following minimum documents shall be submitted to AADC for the process of Handing Over:

- a) Final Approved Master Plan
- b) All AADC approved as built documentation referred in 7.1 SI. No.4 and O&M manuals shall be submitted before commissioning. The as built documentations shall contain all engineering calculations, approved vendor/component list SLD, Schematic, layout and all other engineering drawings, FAT/SAT protocols and reports, setting calculations/ software models, etc. including communication equipment.
- c) Contract document signed between the Developer and Contractor based on the approved Tender Evaluation document. The document shall contain the complete BOQ with Unit Rates for Supply and Installation separately as per standard ADWEA format
- d) Documents of ADWEA/AADC Project Execution forms
- e) ADWEA/AADC Specification related to material Guarantee of 5 to 10 years e.g. meters, valves, strainer etc....
- f) Variation Orders, if any
- g) Deviations, if any and approval for the same from AADC
- h) BOQ format as per ADWEA standards
- i) Final Payment Document. Undertaking from all Contractors/Sub – Contractors employed by the Developer.
- j) All details required to update the network in GIS as per ADWEA standard specifications for power and water, also communication data is required in GIS such as FOC routes and manholes, etc.
- k) Transfer of 2 years warrantee and transfer the guarantee if available of all equipment / System. Clearly stating extended warrantees, if any



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- l) Approvals obtained from various authorities like Municipality (for corridor) Environmental Agency, Civil Defense etc.
- m) Transfer of ownership of substation land and access to the substation
- n) Approved Manufacturer Recommended Spare parts and tools list including communication spares.
- o) Training Schedule for AADC Staff including relevant training document.
- p) Overall project view (consisting all new substations owned built by Developer /Contractor and the connections between them showing all AADC Incomers data (station name, feeder No. and etc) , locations of meters , single line diagram of each station with all ratings .
- q) Overall Project documentation list and submission approvals status to be provided to follow up the project .
- r) Setting calculation to be done in ETAP latest software & models handed over to AADC after approval.
- s) Licensed relay Software and soft copy for all implemented settings (to be handed over before commissioning), communication equipment application software license.
- t) Relay data & Settings shall be updated into ASPEN software.
- u) List of main equipment's with quantities in each station type showing the ratings and the outgoing feeder applications with load details (Ex:- cooling chillers , motors, generators or other) .
- v) Single line diagram should be submitted for each type covering all main items (CT, VT, meters, Transformers , Switchgear CB, interlocking, Relays, cables, etc) with all technical parameters (type, rating, class...etc) and legend with all symbols description.



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Financial Requirements:

w) Cost Components : It is important to consider Cost associated with asset handover, which may be varying according to each asset transfer. However, it may include the followings:

- Value of asset transferred.
- Service Date.
- Ownership.
- Payment method.
- Expected date to finalize the projects.
- Bill of Quantity.
- Maintenance Budget.
- Frequency of maintenance.

x) Applied policies & Procedures: to ensure sound financial statements and proper recording of transferred assets in financial system; these assets will be recorded based on the below:

- International Financial Reporting Standard (IFRS).
- Accounting Policy & Procedures Manual issued by ADWEA (APPM).

The above Procedures are subject to review and discuss with the company's external auditors.



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6. PROCESSES

- 6.1 Developer writes to AADC applying for handover of assets after the successful commissioning
- 6.2 Developer to submit the undertaking letter to AADC for any pending work that prevent the commissioning.
- 6.3 Compliance with ADWEA Project Procedure manual.
- 6.4 Consultants and contractors must be in ADWEA vendors and qualified..
- 6.5 AADC forms its Handover Committee comprising representatives of the Directorates/ Divisions AMD, PRJD, EO&MD, WO&MD, CSD, SD and ADWEA consultant of this development.
- 6.6 AADC committee writes to developer asking:
- The handover of all required documents of the development in soft copies as per Annexes 1 of this procedure.
 - Officially nominate his handover team comprising: representative of Developer, Developer Consultant and developer contractor.
- 6.7 Developer shall submit all required documents as required in 6.3 and officially nominate and authorize his handover team, allowing a period of up to one month for documents review by AADC.
- 6.8 AADC and Developer to agree on a schedule for final handing over of assets by AADC Handover Committee to visually inspect and verify infrastructure. A period of up to one month should be allowed for this.



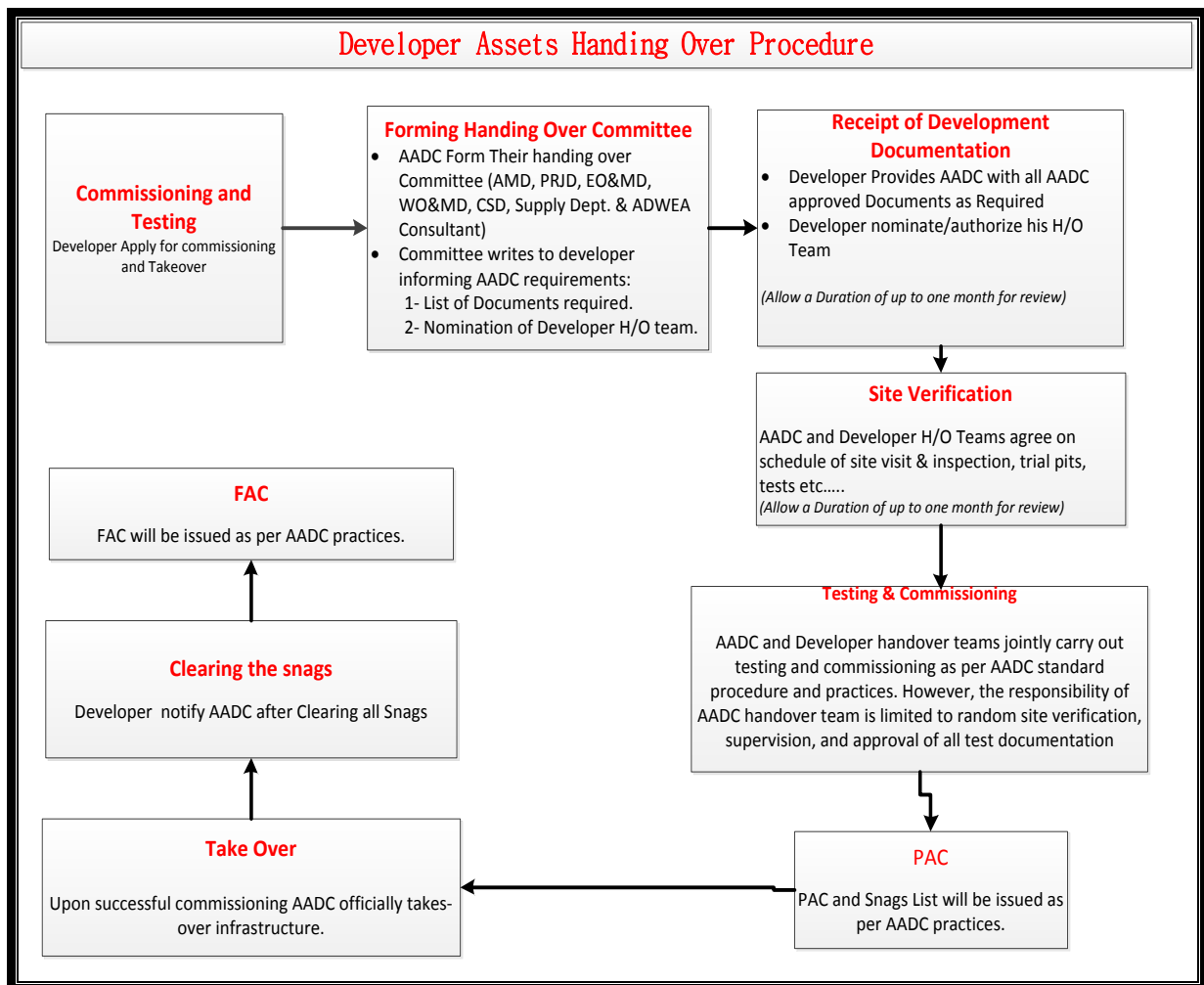
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- 6.9 AADC and Developer handover teams jointly verify assets as per AADC standard procedure and practices.
- 6.10 Upon successful commissioning of infrastructure, AADC will issue PAC and snags list as required, as per AADC practices
- 6.11 Upon successful verification of infrastructure, AADC will issue transfer certificate as per AADC practices
- 6.12 Developer to work on snags list and completing the warranty period as required and notifies AADC after clearing all snags.
- 6.13 Upon Successful clearing of snags list, AADC will issue FAC as per AADC practices
- 6.14 Compliance with AADC cost model structure.

Process (Flow Chart):



7. ANNEXES

7.1 Detailed List of Required Documentations.



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7.1 Detailed List of Required Documentations

SN.	Description
1	General Documents
1.1	Final Development Brief & Final Master Plan.
1.2	Load/Demand Calculation for Electricity/Water with a projection of annual utilization over the first 10 years after commissioning of the development.
1.3	Hydraulic Analysis.
1.4	Load Flow and Short Circuit Analysis (if applicable).
1.5	Sizing calculations for transformers, cables, pumps, control valves etc.
1.6	Approved System Studies (Load Flow and Short Circuit).
1.7	Copy of signed SLD and any other government orders/approvals/licenses or ADWEA/TRANSCO approvals related to the Infrastructure Development.
1.8	Deviations from AADC Standard Specification and Procedure, if any and approval for the same from AADC.
1.9	Transfer of ownership of substation/pumping station land and clear vehicle access to the place.
1.10	List of the customers supplied by each SS, mentioning the Bulk / single Customer SS connected to it and approximate connected & Demand load of each customer.
1.11	Agreement with the individual Plot owners pertaining to the power & Water connectivity, including special instructions related to design etc., the same shall be intimated and submitted to AADC.



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2	Contract Documents
2.1	Contract Documents (complete set).
2.2	Variation Orders (if applicable).
3	Site and Test Documents
3.1	Acceptance Test Procedure and Test plan.
3.2	Material Dossiers.
3.3	Workshop Test Reports (Routine Tests).
3.4	Progress Reports / Progress Photos.
3.5	Receiving cum Damage Reports including Shipment Documents and Delivery Note.
3.6	Erection Progress Report including Manufacturer Approval.
3.7	Invoices of Progressive Payments (Final)
3.8	Acceptance Test Procedure FAT, SAT, Adaptation testing, RTU/SCMS testing, Point to Point Test. and communication link /equipment testing.
3.9	Acceptance Test Report FAT, SAT/Site Test Reports / Type Tests Certificates.
3.10	Any "Notice of Intent", TPD Approvals & Land Ownership Of Substations/ Pump Stations Plots.
3.11	Method Statement (Construction Stage).
3.12	Soil Investigation & Soil Analysis Report.
3.13	DMS Design Documents including Adaptation Design, Tele-information Plan, MDF Design, RTU Design, Signal List, RTU I/O Diagrams, SLD, Equipment layout, Cable Overview / List, DC System Design, Communication System Design.



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3.14	Calibration Certificate of all instrumentation and measuring equipment.
3.15	For all substation equipment's, the following shall be submitted to AADC for review and approval: <ul style="list-style-type: none"> a. Vendor / Type Approvals, Technical Data, General Arrangement / outline / views / layouts, cross section diagrams, foundation details, painting procedures etc. b. Detail Protection /Switchgear Single Line Diagrams, Block/Logic diagrams, Schematic / Circuit , Wiring, Terminal Diagrams, Work Method Statements, Factory and Site Test Procedures / Reports, Setting calculations, etc.
4	As Built & Commissioning Documents
4.1	Distribution Network Diagrams
4.2	Single Line Diagrams
4.3	O&M Manuals
4.4	Operational Philosophy
4.5	Warrantees for all equipment
4.6	Structural & Civil Works Warrantees
4.7	As Built Drawings Compatible to GIS System and ADWEA Standards and Specifications
4.8	All Configurations and Default Settings
4.9	License / Authorization software / Programming Unit for O&M
4.10	SCADA System Software in CD
4.11	System Software & the Application in CD (PLC/RTU Software)
4.12	PLC/RTU Programs
4.13	Approved Technical Data Sheets
4.14	Final Manufacturer Recommended Spares Parts List with Part number including handing over voucher (AADC-SRV)
4.15	Special & Operational Tools (Special tools in Substation)including handing over voucher (AADC-SRV)



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4.16	Pumps, Motors & Field Instruments Test Reports & Log Sheets.
4.17	Fire Alarms & Alarms Test Reports.
4.18	Pump Station, Reservoir & Pipeline Commissioning Reports including disinfection report.
4.19	Communication channels routing.
4.20	Fiber Optic Cables Layout.
4.21	Load Calculation for 8 DC Power Supply System.
4.22	As Built DMS Documents including: Adaptation Design, Tele-information Plan, MDF Design, RTU Design, Signal List, RTU I/O Diagrams, SLD, Equipment Layouts, Cable Overview / List, DC System Design, Communication System Design
4.23	Test Records including Adaptation test, RTU test, Point to Point test, FAT, and SAT.
4.25	Documents and Philosophy of special features in the Substation (if any) as interlocking system.
4.27	Contact Details of the equipment supplier including supplier name, contact numbers in UAE/ Factory Contact Persons, including phone, mobile and mail address for future reference.
5	Developer/Consultant/Contractor Responsibilities during Project Execution
5.1	All FAT and SAT program to be notified to AADC and witnessed/approved by AADC (before dispatch for FAT and before commissioning for SAT).
5.2	<p>Engineering documentation shall be submitted for approval. Drawing/Technical submittals should follow a hierarchy as required for manufacturing/ project programs. We recommend hierarchy as follows:-</p> <ul style="list-style-type: none"> • Substation:- <ol style="list-style-type: none"> 1) Overall Single Line Diagram 2) Equipment Layout 3) Basic design calculations (Ex: Earthings



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	<ul style="list-style-type: none"> • <u>Equipment (switchgear, Transformer, LVAC, DC sys.) :-</u> <ol style="list-style-type: none"> 1) Vendor approvals 2) Basic design calculation (CT & VT , DC system, cables....) 3) Single Line Diagram 4) Logic Diagram 5) Components type approvals 6) Circuit and terminal diagram 7) Layout and General Arrangements (G.A) 8) FAT procedures, Protocols and Reports . 9) Protection Settings details, calculations and approvals. 10) SAT procedures, Protocols, Reports and O&M manuals 11) Commissioning procedures and Protocols.
5.3	Product ordering code (not just the make and type) for secondary equipment shall be indicated clearly during detail engineering approvals.
5.4	The compliance of type test requirements by vendors in line with ASTS shall be completely met.
5.5	The compliance of type test requirements by vendors in line with ASTS shall be completely met.
5.6	The process of validity of type test reports shall be clearly defined considering that the international standards are subject to continual update.
5.7	The process of validity of type test reports shall be clearly defined considering that the international standards are subject to continual update.
5.8	MTBF (Mean Time between Failures) and MTTR (Mean Time to Repair) for each type of device shall be provided and guaranteed.
5.9	Locally available professional authorized and trained support team to attend to the warranty issues shall be confirmed. Detailed procedures and contacts shall be proposed. If AADC do not accept local team based on current performance, available of OEM representatives from factory locally shall be ensured.
5.10	All critical components such as current and voltage transformers, special application relays , broken conductor etc., shall be prequalified.



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5.11	If the failure rates are abnormal and any defect arises after 2 years of operation, such product shall be suspended from ADWEA project installation with a written notice until satisfactory solution is provided.
5.12	It should be a primary requirement from the Project Developers to obligate/instruct their contractor & Consultant to meet ADWEA standard requirement, to avoid losing AADC rights against added responsibilities (which exclude ADWEA standard requirement) Ex: sending the SS equipment material to the site without AADC approval/FU, waiving FAT, delaying submitting protection setting study for AADC approval before commissioning,...etc.
5.13	Contractor shall ensure with the manufacturer to notify that if any of hardware/software/firmware components changed from those approved during PQ and if the base design features are changed.
5.14	Contractor shall ensure with the manufacturer to notify to ADWEA and end users for any of the product would be moved to obsolete stage or if supply of spares would be ceased, in advance by 2 years at least, to enable us to take necessary action for any issues related this product in addition to arrange required spares
5.15	Contractor/Consultant should comply with latest ADWEA specification (ASTS) , check supplier documents/replies compliance with ADWEA requirements and if found any deviation, same should highlighted clearly in the beginning of the project and provide a compliance statements for all other items .
5.16	Contractor should check all Supplier replies before sending them to AADC for commenting.
5.17	Contractor should advise supplier to fill all ADWEA Technical Data Sheet taking in account other required items such (CT & VT, Protection, DC System, LVAC, Metering device ..etc) technical data.
5.18	A declaration statement shall be obtained from the respective contractor and vendor for stating no deviations from ASTS and/or international standard requirements.
5.19	Consultant appointed by developer as technical representative for these projects, should be approved by AADC after interview and see his technical and managerial capabilities as electrical engineer/supervisor in order to contribute in the right way to execute



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	the project in an efficient manner .
5.20	Consultant assigned by the representative project owner/developer should be fully aware of AADC procedures/specification to be followed for document approvals/ASTS.
5.21	Consultant/Contractor to ensure that engineering documentations and site works are completed and fully in line with ADWEA specification. All equipment and components should be in line with ADWEA/AADC technical specification and functional requirements.
5.22	Assigned/agreed persons from Consultant side shall follow the AADC comments in addition to review/modify/update and confirm passing the comments to the contractor and should effectively follow up the subject until it get completed/closed/finalized.
5.23	Consultant/Contractor Should review the submittals and discuss their comments with AADC before sending the final technical documents for AADC review and approval. Consultant/Contractor should carefully check and confirm if there are any deviations found in the submitted document then submit Complete List of Deviations from ADWEA specifications and Data Sheet.
5.24	Only the bidders, vendors and subcontractors with qualified status in ADWEA commercial register shall be participate in the bid process. Subcontractor if any shall be clearly identified during the original proposal.
5.25	All proposals for spares, tools, training (Factory/Site),.. etc, shall be submitted and approved by AADC. Same shall be finalized before commissioning.