**Appendix No.5 to the Supplement No.10 to the Fuel Contract No.08843672/50293-09D 08.08.1995**

**Leak Check of Cladding System in mast of Fuel Handling Machine (FHM LCC SYSTEM)**

**Definitions:**

Equipment; means the Leak Check of Cladding System in mast of Fuel Handling Machine.

Delivery Acceptance Protocol; means that the Equipment delivered by the Contractor at the airport of destination.

Protocol of Acceptance of the Equipment; means, certifying that the Contractor has successfully completed its obligations and responsibilities stipulated in the present Appendix).

1. **Subject of the Appendix**

The subject of the Appendix is the development and supply of the working design documentation and manufacturing and delivery of the Equipment ~~Leak Check of Cladding System in mast of Fuel Handling Machine (FHM LCC SYSTEM)~~ together with installation, commissioning, Acceptance test and training of the said Equipment ~~System~~ to the Principal’s personnel.

1. **Scope of the Appendix**

2.1 The Equipment ~~FHM LCC SYSTEM~~ is intended ~~designed~~ to detect FAs with unsealed fuel rods by the activity of gaseous fission products in the volume of working mast of the FHM while the reactor stopped during transportation and unloading/shuffling of FAs.

The Equipment functionally consist of three main parts:

1. Pipeline (mechanical) part of the Equipment ~~(LCC SYSTEM~~ (MP) should be located on the mast of the FHM and consist of pipelines, fittings, nozzles, and fastening elements. The pipeline part is intended to perform the following functions:

* supply of bubbling air under the fuel-assembly bottom nozzle;
* bubbling;
* supply of gas samples to the technological equipment.

1. Technological part of the Equipment ~~(LCC SYSTEM~~ (TP) should be located on the FHM carriage. The technological part is intended to perform the following functions:

* Air preparation and supply for bubbling;
* Gas sampling and treatment;
* Gas sample activity check;
* Check results processing;
* Data transmission and reception of commands from the remote control equipment;
* LCC process control;
* LCC preliminary results generation.

1. Operator's terminal / Remote control Equipment ~~(LCC SYSTEM~~ (RCE) consists of a personal computer and software. The operators terminal remote control equipment is intended to perform following functions

* LCC remote control;
* Data reception and transmission of commands to the technological equipment;
* Storage and display of check results

Software. Software functions:

* Control of the remote control equipment;
* Control of the technological equipment;
* Data exchange between the remote control equipment and the technological equipment;
* Equipment ~~LCC SYSTEM~~ hardware diagnostics;
* Data processing, storage and displaying;
* Processing of FA sample check results and LCC results presentation.

The works with the Equipment shall be performed as per regulations and the rules effective in the Russian Federation. List of regulations and rules is given in Attachment No.10 to the present Appendix - At the Principal's request the Contractor shall submit some regulations and rules from the list given in Attachment No.10 to the present Appendix.

2.2 The main principle (the block diagram) of work of Equipment ~~FHM LCC SYSTEM~~ is presented in figure 5.1



*FA*

*ММ*

*LCC SYSTEM ME*

*LCC SYSTEM TE*

*FHM trolley*

*FHM*

*~~IMSS~~ RCE*

*FHM control room*

1. Sparger block
2. Compressed air supply
3. Gas sampling
4. Sample release
5. Condensate drain-off
6. 220 VAC, 50 Hz power

*Steel Containment*

*(Reactor Hall)*

1. Connection box
2. Control

Figure 5.1 The main principle (the block diagram) of work of the Equipment ~~FHM LCC SYSTEM~~

Overall dimensions of the cabinets installed on the FHM trolley (for the operation period) as well as in the FHM control room.

The FHM trolley shall have following characteristic:

FHM carriage:

Technological equipment cabinet: width × depth × height – 835 × 680 × 2290 mm;

weight – 450 kg.

Junction box: width × depth × height – 176 × 90 × 190 mm;

weight – 1.5 kg.

Control room:

Junction box (in the control room wall): width × depth × height – 176 × 90 × 190 mm;

weight – 1.5 kg.

Remote control equipment (notebook with installed software set + printer): width × depth × height – 308 × 290 × 70 mm (without printer dimensions);

weight – 4.5 kg.

The technological equipment power supply source shall have the following parameters: 220 V AC supply voltage, frequency of 50 Hz, maximum power consumption of 5 kW.

\* - the above information (characteristic) shall be clarified.

2.3 Description of the In-Mast Sipping Method

FA is extracted from the core, placed into the FHM working mast (hereafter - WM) and lifted to the transport position. Due to hydrostatic pressure variation while lifting FA, fission products accumulated under enclosures of non-tight FAs pass to the water filling the internal volume of the WM middle section. Then FA is bubbled with compressed air for a short time to extract gaseous fission products (hereafter - GFP) from water. GFP-containing bubbling air fills the internal above-water volume of the WM middle section, wherefrom a gas sample is taken, and then beta activity and gamma activity of the sample are measured.

The FA preliminary rejection criterion is GFP activity in the gas sample rising above the threshold value preset either by default or by 3 check cycles with the initial FA or with originally right FA.

The method of the Equipment fails to provide quantitative indicators of FAs non-tightness. A conclusion on FA non-tightness is made on the basis of statistical results distribution of the Equipment for all fuel assemblies under check.The FA rejection criterion is a statistically significant excess of beta activity of GFP isotopes contained in a gas sample above the respective average (background) values of gas samples activity for the given FA array.Statistical processing by Equipment runs automatically as per the developed algorithm, and results are issued and documented.

2.4. Installation

1. Mechanical part (MP). Before installing the Equipment on the mast, the mast shall be deactivated. The works performed on the mast:

* placement of the mast at the work site;
* the installation of Equipment MP should conduct without working mast removal;
* pipelines laying;
* attachment holes drilling;
* cutting out windows in the middle section;
* drilling of holes for air sampling;
* installation of the nozzle unit.

1. The works performed with FHM. Technological part - the technological part shall be installed either on the FHM carriage or on the bracket.
2. Laying cables in the current leads of the bridge and the carriage and their connection to the sealed passages;

Cable products are required for arranging:

* a data line between the Equipment RCE and the Equipment TP (outside the containment from the FHM control room from the junction box to sealed passages; in the containment: from the sealed passages to the FHM marshalling cabinet, on FHM from the FHM marshalling cabinet to the marshalling cabinet of the FHM carriage);
* power supply line of the Equipment TP (outside the containment from the power supply source to the sealed passages; in the containment: from the sealed passages to the FHM marshalling cabinet, on FHM from the FHM marshalling cabinet to the marshalling cabinet of the FHM carriage);
* power supply line of the Equipment RCE (outside the containment from the power supply source to the Equipment RCE);

The sealed passages are intended for connection of signal cables and power supply cables between the FHM control room and the containment. The sealed passages and the its modules don’t included in the delivery scope.

It is preferred to arrange the data line between the Equipment RCE and the Equipment TP by an optical line.

1. Junction boxes attachment in the containment and in the control room.

2.5 The scope of the Equipment and documentation to be delivered for the Equipment ~~LCC SYSTEM~~ as well as the main activities and stages of Equipment development are presented in table 5.1

Table 5.1: The scope of the Equipment and documentation as well as the main activities and stage of the Equipment development

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| The scope of the Equipment and the documentation | | | | |
| No. | Equipment denomination | | | Q-ty |
|  | FHM Equipment consisting of: | | | 1 |
| 1 | Mechanical part of the Equipment | | | 1 pc. |
| 2 | Technological part of the Equipment  The cabinet of control, preparation and analysis, and air preparation | | | 1 pc. |
| 3 | Remote control equipment of the Equipment | | | 1 pc. |
| 4 | Junction box | | | 2 pc. |
| 5 | Set of spare parts (list is given in the Attachment No.1) | | | 1 pc. |
| 6 | Set of tools and accessories (list is given in the Attachment No.1) | | | 1 pc. |
| 7 | Set for installation, setup and adjustment of FHM IMSS at Bushehr NPP (list is given in the Attachment No.1) | | | 1 pc. |
| 9 | Set of mounting parts for mounting the Equipment in the containment | | | 1 pc. |
| 10 | Set of mounting parts for mounting the Equipment in FHM control room | | | 1 pc. |
| 11 | Set of cable products | | | 1 pc. |
| 12 | Operational documentation set (list is given in the Attachment No.1) | | | 1 pc. |
| The final set configuration of the Equipment should be specified under the results of the Equipment development | | | | |
| Main activities and stages of Equipment development | | | | |
| No. | Main steps of works | Stages of works | Executor | |
| 1 | Technical assignment\*\* | Development of Technical assignment | JSC «TVEL», | |
| 2 | Development of Technical documentation\*\* | Development of software of Equipment TP and Equipment RCE as per Attachment No.1 to this Appendix | JSC «TVEL», | |
| Development of design documentation, as per Attachment No.2 to this Appendix | JSC «TVEL», | |
| Development of programs and test procedures as per Attachments No.3 and No.4 to this Appendix | JSC «TVEL», | |
| Development of operational documentation | JSC «TVEL», | |
| 3 | Equipment manufacturing | Manufacturing of Equipment MP | JSC «TVEL», | |
| Manufacturing of Equipment TP | JSC «TVEL», | |
| Manufacturing of Equipment RCE | JSC «TVEL», | |
| 4 | Equipment mounting | Mounting of Equipment MP in place without removal and dismantling of working mast as per Attachment No.6 to this Appendix | JSC «TVEL», | |
| Installation of the air supply pipeline and gas sampling pipeline on the external mast section as per Attachment No.6 to this Appendix | JSC «TVEL», | |
| Installation and connection of Equipment process cabinet on the MPS-V-446 carriage as per Attachment No.6 to this Appendix | JSC «TVEL», | |
| Installation, cabling between RCE and TP and connection of the control rack in the control room of the FHM control system as per Attachment No.6 to this Appendix | JSC «TVEL», | |
| Adjustment, trial running and tests of Equipment as per Attachment No.6 to this Appendix | JSC «TVEL», | |
| 5 | Equipment testing | Acceptance tests of FHM Equipment | JSC «TVEL»,  /BNPP-1 | |
| 6 | Equipment Training | Equipment Training for the Principal Specialists on Program as per Attachment No.5 to this Appendix | JSC «TVEL»,  /BNPP-1 | |
| Completion Report for Equipment Training for the Principal Specialists as per Attachment No.7 to this Appendix | JSC «TVEL»,  /BNPP-1 | |
| 7 | Commissioning | Handling of FHM Equipment on BNPP -1 | JSC «TVEL»,  /BNPP-1 | |
| Commissioning works on BNPP -1 | JSC «TVEL» | |
| Final Acceptance tests of FHM Equipment as per Attachment No.8 to this Appendix | BNPP -1,  JSC «TVEL» | |
| \*\* These works should be developed during…6..months ~~since~~ before FHM inspection of BNPP-1.  Note: The above main steps of works comprise all activities associated with the FHM Equipment whether explicitly mentioned or not. | | | | |

2.6 Equipment ~~LCC SYSTEM~~ should detect both type of FAs including UTVS and TVS-2M simultaneously in the transient fuel cycles.

2.7 Training of the BNPP-1 personnel on Equipment ~~LCC SYSTEM~~ shall be carried out during the Planned Repair and Maintenance before 6th fuel loading. The training program is given in the Attachment No. 5.

2.8 Technical documentation including specifications, drawings and diagrams, calculations and methods, installation instructions and design, repair documentation, operation manuals shall be delivered in English and Russian copies.

2.9 Equipment’s ~~FHM LCC SYSTEM~~ Technical Characteristics

Equipment ~~FHM LCC SYSTEM~~ is intended ~~designed~~ for detection of non-tight FA on the shut-down reactor while transporting the assemblies on the fuel-handling machine. Equipment ~~FHM LCC SYSTEM~~ is installed on fuel-handling machines of WCPR (water-cooled power reactors).

1. Technical characteristics

Inspection period for a single fuel assembly, maximum 180 s

Continuous operation time, minimum 720 hours

1. Operation conditions

The Equipment ~~FHM LCC SYSTEM~~ mechanical part is installed on the mast of the fuel-handling machine and is operated under the same conditions.

1. Working environment water or aqueous process solution

(distilled water containing 16-20 g/dm3 of boric acid)

1. Water temperature, °С, +70 maximum
2. Excessive pressure, MPa 0.2 maximum

The ~~LCC SYSTEM technological~~ Equipment TP is installed on the fuel-handling machine trolley in the reactor hall and is operated under the following conditions:

1. Working environment air
2. Air temperature, °С, from +15 to +40
3. Absolute pressure, MPa from 0.84 to 1.067
4. Relative air humidity, %, maximum 90
5. Detectable radioactivity β – radiation
6. Power range of detectable radioactivity, keV from 80 to 2000
7. Beta-radiating gases detectable radioactivity range, Bq/m3 3.7⋅104 to 3.7⋅109

Equipment ~~FHM LCC SYSTEM~~ RCE is installed in the fuel-handling machine control room and is operated under the following conditions:

1. Working environment air
2. Air working temperature, °С, from +10 to +25
3. Pressure atmospheric
4. Relative humidity at temperature of 25 °С, %, maximum 80
5. Equipment ~~FHM LCC SYSTEM~~ safety class: 4.

**3. Terms of payment**

3.1 Payments under the Appendix shall be effected in favor of the Contractor from the irrevocable LC opened/increased by the Principal in accordance with the terms and conditions of the present Appendix and on the basis of the latest revision of the Uniform Custom and Practice for Documentary Credits, publication No. 600 of the International Chamber of Commerce (UCP 600) in the amount of prices for Equipment ~~FHM LCC SYSTEM~~ reflected in Paragraph 3.1.2 of the Supplement No.10 to the Fuel Contract with providing by the Contractor the proforma invoice and Insurance Policy.

3.2 60 (sixty) calendar days prior the opening/increase of the LC the Contractor shall provide to the Principal the name of Nominated Banks for approval. 30 (thirty) calendar days prior the LC opening the Principal shall send to the Contractor the name of approved Nominated Bank.

3.3 The Principal shall instruct to Issuing bank to open/increase the LC in compliance with the terms and conditions of the Appendix as well as UCP600 after receiving required Performa Invoice and Insurance Policy from the Contractor.

3.4 The Nominated bank shall advise the LC opening/increase to the Contractor.

3.5 30 (thirty) calendar days before manufacturing of the Equipment ~~FHM LCC SYSTEM~~, the Principal shall open/increase the LC for 20% of the price of the Equipment ~~FHM LCC SYSTEM~~ as advance payment. The initial validity of the LCs shall be 6 (six) months and shall be extended by the Principal in case of necessity. For the benefit of receiving of the Advance Payment, the Contractor shall timely submit an advance payment bank guarantee issued by the Russian bank accepted by the Central Bank of Iran (CBI) as the Issuing Bank of the LC**.** The amount of a bank guarantee for an advance payment is equal to 20% of the price of the Equipment ~~FHM LCC SYSTEM~~.The amount of the advance payment shall be deducted proportionally from invoice of the Contractor.

The Nominated Bank shall pay the advance payment to the Contractor under the LC in value of 20% of the price of the Equipment ~~FHM LCC~~ against the following documents:

- signed Commercial invoice for 100% of the price of the Equipment ~~FHM LCC SYSTEM~~, reflecting the price for payment under LC equal to 20% of the price of the Equipment ~~FHM LCC SYSTEM~~ - one original;

- an advance payment bank guarantee for 20% of the price of the Equipment ~~FHM LCC SYSTEM~~ and forwarded through the SWIFT.

3.6 15 (fifteen) calendar days before delivery of the Equipment ~~FHM LCC SYSTEM~~, the Principal shall increase the LC up to 100% of the price of the Equipment ~~FHM LCC SYSTEM.~~

3.7 The Nominated bank shall effect by at sight the payment of the 80% of the price of the Equipment ~~FHM LCC SYSTEM~~ against submission of the following documents by the Contractor to the Nominated bank:

а) signed Commercial invoice for 100 % of price of the Equipment ~~FHM LCC SYSTEM~~ reflecting the price for payment under the LC and equal to 80% of the price of the Equipment ~~FHM LCC SYSTEM~~ – one original and 2 copies.

b) Protocol of Acceptance of the Equipment ~~FHM LCC SYSTEM~~ described in the Attachment No. 8 to this Appendix signed by the Contractor and the Principal – one original and two copies

1. Certificate of origin issued and certified by local Chamber of Commerce (one original and two copies).
2. packing list of the goods (one original and 2 copies).
3. ~~Clean~~ Airway bill of lading marked freight prepaid bearing the flight number (one original)
4. ~~Insurance Policy covering value of the goods plus 10% (ten percent).-~~

*(Insurance Police provided to the Principal together with proforma Invoice for LC opening)*

The Documents should be provided by the Contractor to the Nominated bank during the LC validity.

3.8 The Contractor is obliged to submit an acceptable Good Performance Bank Guarantee (GPBG) to the Principal equivalent to 10% ( ten percent) of the price of the Equipment ~~FHM LCC SYSTEM~~ for the good performance of his obligations under the Appendix.

The Good Performance Bank Guarantee shall be submitted by the Contractor 15 (fifteen) days prior to the opening of the LC for the Equipment ~~FHM LCC SYSTEM~~ as per Paragraph 3.5. The Good Performance Bank Guarantee shall be released after successfully completion of the Warranty period of the Equipment.

The cost related to the Good Performance Bank Guarantee will be covered by the Contractor.

3.9 The payments under the Appendix shall be made in the currency of the Contract.

3.10 If the Principal does not increase the LC in compliance with Paragraphs 3.3; 3.4 and 3.5 and not follow the conditions of Article 4 of the Appendix the Contractor shall have the right to shift the date of fabrication start of the Equipment ~~FHM LCC SYSTEM~~ under the Appendix for the same period of delay in LC increasing.

3.11 In case the Contractor failed to timely supply the Equipment ~~FHM LCC SYSTEM~~, all evident expenses incurred to the Principal as a results of delay including expenses connected with extension of the LC shall be borne by the Contractor. The Contractor shall pay to the Principal's account against the Principal's invoice (with proof documents) through the Nominated bank to Central Bank of Iran.

3.12 All banking charges of Letter of Credit outside of Iran shall be borne by the Contractor and inside Iran shall be borne by the Principal.

**4. Warrantees**

4.1 The warranty period shall be 18 months after testing, handing over and final acceptance of the Equipment ~~LCC SYSTEM~~ at the BNPP-1.

4.2 The Contractor warrants that:

4.2.1 The Equipment ~~FHM LCC SYSTEM~~ will be performed with full information and are reliable to be used during operation of Bushehr Unit 1.

4.2.2 The Contractor warrants that the quality and the quantity of the Equipment ~~of LCC System~~ are:

* In accordance with the specifications and nomenclatures presented in the present Appendix and without any non-conformances.
* Free of defects, failures, faults and/or deficiencies.

4.2.3 Equipment ~~FHM LCC SYSTEM~~ transferred within the frames of the Appendix is not encumbered by third party’s rights and is free to be transferred to the Principal.

4.2.4 The Contractor warrants that the Equipment ~~a FHM LCC SYSTEM~~ provided under the Appendix will be totally acceptable for Unit 1 Bushehr NPP operation.

4.5 The Contractor warrants that if up to the end of warranty period failures, faults or deficiencies is detected in any part of the Equipment ~~LCC System~~, caused by manufacturing defects, the Contractor shall without delay initiate all necessary measures, upon receipt of the Principal's written notice and within a mutually agreed reasonable time, improve, repair or replace the defective part(s) of the Equipment ~~LCC System~~ or replace such part(s) by new ones of more suitable design, whenever shall be necessary, at the Contractor’s cost.

In any case, the warranty period of such part(s) shall continue for period at least 6 months from the date of repaired or replaced part(s) is ready to resume operation.

The warranty period of the Contractor shall in no way be reduced by any approval of the Principal or by the test, inspection and controls carried out by the Principal.

4.3 The Principal warrants that:

4.3.1 The Equipment ~~FHM LCC SYSTEM~~ transferred by the Contractor to the Principal under the Appendix shall be used for Bushehr NPP Unit 1.

4.3.2 For the purpose of obtaining the license for transfer of the Equipment ~~FHM LCC SYSTEM~~ by the Contractor the Principal in reasonable time provide the Contractor with representations of the competent authorities of Iran that the Equipment ~~FHM LCC SYSTEM~~ supplied by the Contractor to the Principal under the Appendix:

• Shall not be used for manufacturing nuclear weapons and other nuclear explosive devices or for any other military purpose;

• Shall be under the IAEA safeguards during the period of its presence under the jurisdiction of the receiving country;

• Shall be provided with physical protection not lower than recommended by IAEA;

• Shall be re-exported or transferred from the jurisdiction of receiving country only with prior written consent of the State Corporation for atomic energy “Rosatom” agreed by the Federal Service for technical and export control of Russia

**5. Terms of delivery.**

5.1 The Contractor shall transfer the Equipment ~~FHM LCC SYSTEM~~ on the terms DAP – airport Bushehr (INCOTERMS 2010, ICC, rev. 600) or other airport of Iran agreed by the Parties.

5.2 The delivery date of the Equipment is 2 month before PM-2019/or 12 month after inspection of the FHM on the BNPP-1.

5.3 Not later than 15 (fifteen) days before the flight, the Contractor will notify the Principal about the exact time and detail of the Equipment departure. The Principal shall confirm the readiness to accept the delivery in the airport.

5.4 The Contractor is obliged to receive necessary export license before shipment of the Equipment ~~FHM LCC SYSTEM~~.

5.5 The Contractor shall initiate the procedure of obtaining the export license right after it receives representations according to paragraph 4 of the Appendix.

5.6 The Contractor through the shipping company and along with the Equipment ~~FHM LCC SYSTEM~~ shall transfer three originals of the Protocol of Acceptance (form is presented in Attachment No.8) of the Equipment ~~FHM LCC SYSTEM~~ signed by the Contractor. The Contractor shall notify the Principal via E-mail upon issuance of the each Air Way Bill of the shipment.

5.7 The title of property of the Equipment shall transfer to the Principal from the date of signing at the airport of destination of the Delivery Acceptance Protocol (Attachment No. 3 to the Appendix).

Representatives of the Contractor and the Principal undertake to jointly inspect the Equipment at the Bushehr airport upon its arrival within 3 (three) calendar days since the Equipment arrival to the Bushehr airport.

In the course of the inspection, the Parties shall check the Equipment for external damage, availability of a complete package of technical documentation, preservation of the Equipment markings and packaging, completeness of the delivery package and availability of shipment documents.

Should the Equipment meet the requirements of the present Appendix, representatives of the Contractor and the Principal shall jointly sign the Equipment Inspection Report upon arrival at the Bushehr airport (the form of the Inspection Report is given in the Attachment No. 3).

Should any Equipment defects be detected, representatives of the Contractor and the Principal will draft a Defect Detection Report.

The Principal will provide the necessary assistance to admit the Contractor's representatives to the place of inspection of the Equipment.

# 6. Custom Clearance

The Principal shall perform Customs clearance activities in Iran and the shipment of the Equipment ~~LCC System~~ from the Bushehr Airport to the BNPP-1 shall be carried out by the Principal ~~under supervision of the Contractor~~.

# 7.   Installation, Erection, Acceptance Test, Commissioning Works

7.1 The Contractor shall erect and completely install the Equipment required for fulfillment of the present Appendix to the Supplement No 10. Erection and installation of given Equipment is considered complete if Commissioning tests can be administered on the Equipment. Having completed the activities, the Contractor shall submit for the Principal’s approval the relevant completion reports in compliance with the requirements of the present Appendix.

7.2 Before the installation, adjustment and commissioning the representatives of the Contractor and the Principal undertake, within 2 (two) calendar days since the date of arrival of the Contractor's specialists to perform installation, adjustment and commissioning of the Equipment, to carry out incoming control of the Equipment to make sure that the markings are as specified in the accompanying documentation, the delivery package is complete, there are no surface defects or inconsistencies in terms of completeness of the documentation on operation and repairs of the Equipment, and sign the Incoming Control Report (form for the Report on Equipment Incoming Control at Bushehr NPP is given in attachment No.4) if the results of the incoming control are positive.

If during the incoming control it is found that markings are not as specified in the accompanying documentation, the delivery package is incomplete, there are surface defects, the documentation on operation and repairs of the Equipment is incomplete, the Parties shall agree upon their further steps.

7.3 The Contractor shall execute Commissioning of the Equipment ~~system~~ immediately after completion of erection and installation activities.

7.4 The Contractor is fully and solely responsible for Commissioning and shall commission the Equipment ~~FHM LCC SYSTEM~~ under its own full responsibility.

7.5 The Contractor shall submit to the Principal for approval, the time schedule related to the installation, erection and Commissioning activities at least 30 (thirty) day~~/months~~ prior to start of the commissioning of the Equipment. The Contractor shall submit the list containing the tests required for Commissioning stage and is responsible for performing the said required tests in the specified period of time.

7.6. Having successfully completed all the activities, tests, and adjustments related to the Commissioning, the Contractor shall send to the Principal the protocols, or reports on their fulfillment. The Principal will consider the received documents and approve them in case there is no comment; otherwise, in case of comments, the Principal will send their comments back to the Contractor along with the document, for comments removal. Having received the comments, the Contractor shall implement the comments and return the revised document for the Principal’s approval. Functionality of the Equipment ~~FHM LCC SYSTEM~~ shall be considered fulfilled only when the results of the tests executed at Commissioning stage fully comply with the criteria specified in the present Appendix; otherwise the Contractor shall take the required corrective actions.

7.7 Upon completion of installation, adjustment and commissioning of the Equipment at the Unit 1 of Bushehr NPP, the Contractor and the Principal shall sign the Completion Report for installation, commissioning and adjustment of the Equipment at the Unit 1 of Bushehr NPP (the form of the Completion Report for installation, commissioning and adjustment of the Equipment at the Unit 1 of Bushehr NPP is given in the Attachment No. 8).

# 8. Training of the Principal’s Personnel

8.1 The Contractor shall be fully responsible for comprehensive training of the Principal’s personnel for the purpose of enabling such personnel to fully and safely operate the Equipment ~~FHM LCC SYSTEM~~ as per the present Appendix. Training of the BNPP-1 personnel on Equipment ~~LCC SYSTEM~~ shall be carried out during the Planned Repair and Maintenance before 6th fuel loading or other agreed period by the Parties. The Equipment training program of the Principal’s specialists is presented in the Attachment No. 5 and shows the details and time schedules, the number of trainees, and scope of training, and terms and conditions of training.

~~Within .???. days after completion of the commissioning the Contractor the Contractor shall submit to the Principal the program which shows the details and time schedules, the number of trainees, and scope of training, and terms and conditions of training, and obligations of the Contractor and the Principal related to training (Attachment No. 5).~~

8.2 Upon completion of the training of the Principal’s ~~Bushehr~~ specialists, the Parties shall sign the Completion Report for training of specialists of Bushehr NPP (Form for the Completion Report for training of specialists of Bushehr NPP is given in the Attachment No. 7).

**9. Other conditions**

9.1 After perform of the installation, adjustment and the commissioning of the Equipment as well as finishing the Training the representatives of the Contractor and the Principal shall sign the Final Acceptance Report (the form of the Final Acceptance Report is given in the Attachment No. 8).

9.2 The Parties for the implementation installation, adjustment and commissioning of the Equipment at the Unit 1 Bushehr NPP shall provide the perform of the Requirements of the Attachment No. 9. Requirements for the Work Station, Documentation and Procedure for Installation, Commissioning and Adjustment of the Equipment at the Unit 1 of Bushehr NPP.

9.3 The Principal shall assist with the arrange of the appropriate services, such as transportation, accommodation, meals, etc. (Attachment No. 11).

~~9.1 The title of property for FHM LCC SYSTEM shall transfer to the Principal from the date of signing the Protocol of Acceptance of the FHM LCC SYSTEM supply (.The title of property for FHM LCC SYSTEM shall transfer to the Principal from the date of issuance of bill of lading or other acceptable shipment document to the Principal marked the Principal’s bank as consignee and the Principal as the applicant (or notify party) confirming actual shipment of the Equipment to the address of the Principal.~~

9.4 The ~~said~~ transfer of title of property shall in no way reduce the obligations of the Contractor and its liabilities as described in the present Appendix.

9.5 This Appendix to the Supplement No. 10 is an integral part of the Contract.

9.6 All the changes to this Appendix shall be made in writing and shall be effective only if they are duly signed by the authorized representatives of the Parties.

List of the Attachments:

* + Attachment No. 1: Tables for “Spare Parts Set”, “Set of Tools and Accessories” and “The set for installation, commissioning and adjustment of FHM Equipment”.
  + Attachment No. 2: List of shipping and technical documents to be delivered along with the Equipment.
  + Attachment No. 3: Form for Equipment Inspection Report for inspection upon arrival at Bushehr port.
  + Attachment No. 4: Form for the Report on Equipment Incoming Control at Bushehr NPP.
  + Attachment No. 5: Equipment Training Program for the Principal Specialists.
  + Attachment No. 6: Form for the Completion Report for installation, commissioning and adjustment of the Equipment at the Unit 1 of Bushehr NPP.
  + Attachment No. 7: Form for the Completion Report for training of specialists of Bushehr NPP.
  + Attachment No. 8: Form for the Final Acceptance Report.
  + Attachment No. 9: Requirements for the Work Station, Documentation and Procedure for Installation, Commissioning and Adjustment of the Equipment at the Unit 1 of Bushehr NPP:
  + Attachment No. 10: List of regulations and rules authorizing manufacturing, installation, commissioning and adjustment of the Equipment.
  + Attachment No. 11: Interactions between the Parties during incoming control, installation, commissioning and adjustment of the Equipment, and training of the Principal specialists at the Unit 1 of Bushehr NPP.