

7.0 IMPLEMENTATION AND OPERATION

7.1 Communication

(ISO 9001 Cl. 5.5.3, ISO 14001 Cl. 4.4.3)

7.1.1 Internal communication

(ISO 9001 Cl. 5.5.3, ISO 14001 Cl. 4.4.3)

KSPH&IDCL strongly believes that internal communication regarding the effectiveness of the Quality Management System will aid in the organization's performance improvements and directly involves its people in the achievement of quality objectives. For this one or more of the following methods are used:

- ✓ Management-led communication in work areas, team briefings and other meetings
- ✓ Notice Boards, E-mails, Bulletin boards, Discussion Forum...etc

Internal communication among the various levels and functions in respect of EMS of the organization include:

- a) Information with regard to significant environmental aspects including applicable legal and other requirements;
- b) Environmental management systems monitoring, audit and management reviews.

Internal reporting to various levels and functions of the organization include:

- a) Incident occurring reporting;
- b) Nonconformance reporting;
- c) Environmental performance reporting; and
- d) Environmental aspect identification reporting.

7.1.2 External communication

(ISO 9001 Cl. 5.5.3, ISO 14001 Cl. 4.4.3)

After reviewing the results of the initial environmental assessment, considering the scale and boundary of impact, the management has decided that there is no necessity for KSPH&IDCL to communicate externally about its significant environmental aspects. However, in future, should there be situation, *the decision to communicate* information about the significant aspects, *will be decided by the management and such decisions are documented in "Minutes of Management Review Meeting"*.

MR will be responsible for receiving, documenting and responding to the relevant communication from external interested parties. External reporting covers Statutory reporting and Stakeholder reporting.

Applicable procedure: IMSP-04 Communication

7.2 Customer related processes

7.2.1 Determination of requirements related to the product

KSPH&IDCL always strives to add value to its products and services. Every effort is made in order to identify and fulfill the requirements of these products/ services. Requirements related to product are determined by various means. This includes, but is not limited to,

- 1) Available standards published by the National / International organizations related to construction and related subjects,
- 2) Determining customer expectations for the product by
 - a) Analysing product features and value with that of competitor's products,
 - b) Enhancing product's "value for the money" optimizing Quality-Cost relationship
 - c) Considering cultural and other needs of product users,
 - d) Changing needs and future projected expectations of the customers
 - e) Attending various conferences related to technical advances in product and project management and also by referring to available literature and consulting experts.

While planning for the execution of projects, following points are considered:

- a) Requirements specified by the customer including the requirements for delivery, post-delivery activities and for maintenance purposes.
- b) Requirements not stated by the customer but necessary for specified or intended use where known,
- c) Statutory and regulatory requirements related to the product if any (e.g., stipulated requirements by the local / regional authorities such as corporations, municipal councils, act and rules related to construction and related activities etc.), and
- d) Any additional requirements determined by the organization

7.2.2 Review of requirements related to the product.

Superintending Engineer (Designs) and Executive Engineer (Contracts) review the contract requirements related to the product. This review is conducted prior to the organization's commitment to supply a product to the customer to ensure that,

- a) Product requirements are defined,

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- b) Order requirements differing from those previously expressed are resolved, and,
- c) The organization has the ability to meet the defined requirements.

Records of the result of the review and action arising from the reviews are maintained.

7.2.3 Customer communication

Concerned Superintending Engineer ensures implementation of effective communication established (as described in the procedure **IMSP 18**) for communicating with customer in relation to

- a) Product information,
- b) Enquiries, and
- c) Customer feedback, including customer complaints

Applicable Procedure: [IMSP 09 - Project Management](#)

7.3 Design and development

7.3.1 Design and development planning

Superintending Engineer-Designs [SE-DES] plans and controls the design and development of product designed specifically for the customer (originating organization) requirements that is provided / specified in Memorandum of Understanding or other customer communication. SE-DES coordinates with originating organization or their representative for the development of product and determine

- a) The product development stages
- b) The review, verification and validation that are appropriate to each stage of product development
- c) The responsibilities and authorities for various development activities.

SE-DES manages the interface between different groups involved in the development of project management plan to ensure effective communication and clear assignment of responsibility and fulfilling of liaison requirements.

Design development planning is updated, as appropriate, as the development progresses.

Design development plan is referred in the project management plan.

7.3.2 Design and development inputs

SE-DES or his designated representative determines inputs relating to the product requirements. Records of design inputs are maintained. The inputs include

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- a) Product characteristics,
- b) Applicable statutory and regulatory requirements, (if any), and
- c) Where applicable, information derived from previous similar products and other requirements essential for product development

These inputs are reviewed for adequacy to ensure that requirements are complete, unambiguous and not in conflict with each other.

7.3.2.1 Conceptual design for customer approval

Customer needs and expectations for product and processes, both stated and generally implied, are translated into documented requirements, including statutory and regulatory aspects after being reviewed by the customer and mutually accepted. Based on this, conceptual drawings are made and sent to customer for approval. *The approved conceptual drawings are used as design input to develop design outputs and a set of approved drawings is made available to the customer for record. The executing agency is required to follow these drawings faithfully. Any difficulty encountered during execution will be brought to the notice of KSPH&IDCL by the agency for immediate resolution in consultation with customer*

7.3.3 Design and development outputs

The product development outputs are provided in a form that enables verification against the development input and are approved before release.

SE-DES reviews the product development outputs to ensure that they

- a) Meet the input requirements for product development,
- b) Provide appropriate information for purchasing (contracting) and construction activities,
- c) Contain or reference product acceptance criteria, and
- d) Specify the characteristics of the products that are essential for its safe and proper use.

7.3.4 Design and Development Review

At suitable stages, systematic reviews of product development are performed in accordance with planned arrangements (documented in design and development plan).

To evaluate the ability of the results of design & development to meet requirements, and

To identify any problems and propose necessary actions.

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Participants in such reviews include the representatives of functions concerned (client, if necessary) with the design and development stage that are being reviewed. Records of the results of the reviews and action taken are maintained.

7.3.5 Design and Development Verification

Verification is performed in accordance with the procedure to ensure that product development outputs have met the product development input requirements. Records of the results of the verification and action taken are maintained.

7.3.6 Design and Development Validation

It is impracticable to validate the project's product (buildings) before its delivery. However, product characteristics and related process specifications are established using proven data or using a national / international standard. In addition to this, complaints received regarding product / product performance during the maintenance period, subsequent action taken to resolve it are correlated with relevant monitoring and measurement data to determine deficiency in product / process specifications. This information is analyzed to determine the design related deficiency and to validate the design.

7.3.7 Control of Design and Development changes

The changes identified during any stage of design and development cycle are reviewed, verified and validated, as appropriate, and approved before implementation. The review of product development changes includes evaluation of the effect of the changes on the product already delivered (i.e., in case of similar previous projects such mistakes that have happened will be identified and evaluated to initiate necessary action).

Records of the results of the review of changes and any necessary actions are maintained.

Applicable procedures: [IMSP 10 - Design and development](#)

7.4 Purchasing

7.4.1 Purchasing process

At KSPH&IDCL, the core business element is contractor control activity since the project is generally contracted and executed. Also, the purchase activity carried out by the organization for supporting administrative and for providing infrastructure and related maintenance services are covered under this process. The purchase activities are being carried out through tendering process.

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The purchase-related processes deal with obtaining finished product (building) and also other products/ services required by the organization. The purchase-related processes are

- a) Purchase planning and control,
- b) Registration of suppliers (open ended process),
- c) Documentation of purchase requirements,
- d) Supplier evaluation,
- e) Contracting, and
- f) Contract control.

7.4.1.1 Purchase planning and control

For projects, which are administratively approved by the competent authority, and for which expenditure has been sanctioned, the estimates are prepared by the Concerned Executive Engineer, based on the "Schedule of Rates" (SR) wherever applicable to a particular circle. These estimates are subjected to technical approval / sanction by competent authority. In case the project is under deposit contribution scheme, client's approval is sought for the estimate. These technically cleared estimates form the basis for purchase planning and further activities.

The purchase activities carried out by the organization for supporting administrative and for providing infrastructure and related maintenance services are carried out by functional Heads within the ambit of the powers delegated.

7.4.1.2 Registration of suppliers

For any supplier carrying out business with KSPH&IDCL, registration with KSPH&IDCL is a pre-requisite. This registration process is an open ended process which can be done by the suppliers either through on-line or through direct approach.

7.4.1.3 Documentation for purchase

Each project taken by **KSPH&IDCL** is treated as unique since project characteristics are generally unique. The designated functional heads prepare following documentation for purchase.

- a) Notice inviting tenders including terms and conditions and pre-qualifying criteria for suppliers (for the project under consideration)
- b) Tender documents

E-tendering system is in vogue. Only to the extent where e-tendering is not possible in divisions, manual tendering is resorted to.

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7.4.1.4 Purchase Procedure

Purchase process is carried out in the following stages.

- Evaluation of intending suppliers
- Approval of eligible suppliers by competent authority
- Issue of tender documents
- Pre-bid meeting whenever required
- Training to prospective suppliers in case of e-tendering
- Receipt of offers
- Evaluation of offers
- Approval of the supplier by the competent authority
- Issue of letter of acceptance
- Entering into contract

7.4.2 Purchase information

Purchase information describes the product to be purchased, including where appropriate

- a) Requirements for approval of product, procedures, processes and equipment,
- b) Requirements for qualification of personnel, and
- c) Quality management system requirements.

KSPH&IDCL will ensure the adequacy of specified purchase requirements prior to their communication to the supplier.

7.4.3 Verification of purchased product

Purchase activities are carried out against purchase documents. In case of construction activities, it is dealt in detail under clause number 7.5.1 (Control of production and service provision).

In case of construction activities, Contract control starts with the issue of letter of acceptance. Web based project monitoring system has been established to assist in contract control. Contract control includes the establishment of appropriate contractual relationships and the integration of the outputs for overall management of the project.

Supplier performance is monitored continuously to ensure it meets contract conditions. The results of monitoring are provided to suppliers to initiate necessary corrective actions.

Prior to contract closure, it is verified that all contract conditions have been met and that feedback on supplier performance has been obtained to update the register of approved

suppliers. This data is used for future evaluation or determining re-evaluation of the suppliers.

Applicable procedure:

- 1) **IMSP 08 – Purchasing - General**
- 2) **IMSP 11 - Construction contracts & e-Tendering**

7.5 Production and service provision

Control of production and service provision (project execution and control)

Control of production and service provision encompasses construction management. Concerned Executive Engineer (of particular division to which the project is assigned) with due delegation to respective sub-division and designated AEE, AE / JE plan and carry out project execution activities under controlled conditions. Controlled conditions includes, as applicable

- a) The availability of work instructions, as necessary
- b) The use of the suitable equipment,
- c) The availability and use of monitoring and measuring devices,
- d) The implementation of monitoring and measurement,
- e) Frequent quality checks including third party checks if necessary and
- f) The implementation of release, delivery and post-delivery activities.

Since the project execution activities are contracted, responsibilities of **KSPH&IDCL** personnel are mainly to exercise control on project's product through effective monitoring and quality control of project's product characteristics as per contract conditions. The process of project execution and control is carried out in accordance with established quality system procedure.

Applicable procedures:

- 1) **IMSP 11 – Construction contracts & e-Tendering**
- 2) **IMSP 12 – Construction management**

7.5.2 Validation of processes for production and service provision

KSPH&IDCL executes construction projects for the originating organization. Some of the processes of construction and related activities require validation. Processes where the resulting output cannot be verified by subsequent monitoring or measurement are validated.

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This includes any processes where the deficiencies become apparent only after the product is in use or the service (Construction) has been delivered.

Validations of these processes are made considering:

- ❖ Product and process characteristics
- ❖ Acceptance criteria
- ❖ Quality test methods

These validations demonstrate the ability of these processes to achieve planned results. Generally, national standards are made available for such processes, which provide necessary requirements for the process and the product characteristics. **KSPH&IDCL** adopts these standards. These quality system requirements are communicated to the contractor(s).

Concerned Project Engineers establish arrangements with contractors for these processes including, as applicable:

- a) Defined criteria for review and approval of the processes,
- b) Approval of equipment and qualification of personnel,
- c) Use of specific methods and procedures
- d) Requirements for records
- e) Revalidation.

7.5.3 Identification and traceability

Throughout the process of construction, products / materials (used for construction) are identified for their status (Fitness for use). Where traceability is a requirement (pre-determined at the stage of project initiation), methods are evolved for the purpose. Examples include, Cement (make, batch number), steel (make, grade).

7.5.4 Customer property

Customer property provided by the originating organization to **KSPH&IDCL** may include one or more of the following:

- a) Land for construction,
- b) Intellectual property such as architectural design,
- c) Interiors – fittings etc.,

Necessary controls are applied to ensure that customer property (material) is identified, verified, protected and safeguarded. If any customer property is lost, damaged or otherwise

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found to be unsuitable for use, it is reported to the customer and those records are maintained.

7.5.5 Preservation of product

Project Engineers with due delegation to contractors and by carrying out monitoring activities, ensure proper identification, handling, storage and protection of construction materials, equipment and the product (building) during the course of project execution.

While evolving procedures, considerations are given for the special requirements arising from the nature of the product, application/use of products that are unique where product quality may deteriorate.

7.6 Control of monitoring and measuring equipment

The established system procedures ensure that monitoring and measurement can be carried out and are carried out in a manner that is consistent with the monitoring and measurement requirements.

Quality system procedure provides details on checks and controls needed to ensure that monitoring and measuring devices are controlled so as to ensure that results obtained through them are correct and valid.

Applicable procedure: [IMSP 13 - Control of monitoring and measuring equipment](#)

7.7 Operational control - EMS

KSPH&IDCL has identified operations and activities associated with significant environmental aspects that require operational controls in work practices. These are consistent with organization's environmental policy, objectives and targets, and applicable legal and other requirements. These operations and activities are planned and performed under specified conditions, by

- a) Establishing and maintaining documented procedures where their absence could lead to deviation from the environmental policy, objectives and targets, and
- b) Stipulating operating criteria in the procedures

Applicable procedures are communicated to suppliers / contractors in cases where the identified significant environmental aspects are associated with goods and services provided by them.

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Applicable procedure: [IMSP 21 – Operational control – EMS](#)

7.8 Emergency preparedness and response

KSPH&IDCL has established a procedure to identify potential emergency situations and potential accidents that can have an impact on environment. Emergency response plans are established, and response teams are installed for the identified emergency situations and accidents. These teams will respond to actual emergency and accidents and prevent or mitigate the impacts.

Emergency response plans identify the roles, responsibilities and action to be taken in the event of an emergency; the communication requirements to affected interested parties such as local community and emergency services as appropriate.

Emergency response plans are periodically reviewed, and they are tested through mock drills where practicable. After every mock drill and after responding to actual emergencies, plans are revised where appropriate in order to assure adequate protection to the environment and people.

Applicable procedure: [IMSP 22- Environmental emergency preparedness & response](#)