Equipment Purchase Review Procedure

1. Purpose

The purpose of this procedure is to detail the process to Laboratory Equipment Maintenance (LEM) members, Radiation Safety Officers (RSO), Research Compliance, Research Operation, Institutional Radiation Safety Committee (IRSC) members as well as Principal Investigators regarding the acquisition/purchase of radiation-producing equipment and equipment containing radioactive sealed sources.

2. Scope

This procedure applies to all KAUST research spaces (i.e. this does not apply to the Innovation Cluster and the KAUST Research and Technology Park) where equipment containing sources of ionizing radiation are used.

3. Definitions

ASEPC	Academic Space, Equipment and Planning Committee. The committee is responsible for allocating space as well as approving and funding equipment to the entire KAUST research community.
IRSC	Institutional Radiation Safety Committee. The committee is responsible for ensuring the safe and appropriate use in research of all sources of ionizing radiation.
LEM	Lab Equipment Maintenance team partners with the researcher to deliver expert technical support and maintenance of critical research instrumentation. As a result, LEM must be informed of the equipment maintenance regime before its purchase.
PI	Principal Investigator is the person that oversees the research project involving the use of sources of ionizing radiation and that is responsible for the purchase of the equipment containing sources of ionizing radiation.
RCO	Research Compliance Office oversees all compliance requirements at the university related to research under one coordinated unit.
RLCL	Radiation Labeling Core Lab. Laboratory where all work with unsealed radioactive substances takes place.
RSO	Radiation Safety Officer. S/He is a Lab safety Specialist who is responsible for the university's compliance with the ionizing radiation regulations in Saudi Arabia.
RUA	Radiation Use Authorization. It is a permit granted by the IRSC and required before the use of any sources of ionizing radiation.

4. Purchase Request Review by IRSC

Prior to requesting a radiation-producing equipment or equipment containing radioactive sealed source the PI/responsible person must ensure that the equipment purchase request has been reviewed and cleared by the IRSC as well as being reviewed by the other required

departments/groups such as LEM. The IRSC is responsible to review and clear the purchase request for all equipment containing a source of ionizing radiation, but it delegates its responsibility to the RSO for some radiation-producing equipment and equipment containing radioactive sealed sources that are considered safe (see Table 1).

Table 1. Person/body responsible for the purchase request review and approval of equipment containing sources of ionizing radiation at KAUST.

Type of ionizing radiation	Body/person reviewing the purchase request
Radiation-producing equipment emitting x-rays with energy below 50 kV which are fully shielded *electron microscopes, x-ray analysis equipment, etc.*	RSO *(under delegation from IRSC)*
Radiation-producing equipment where the x-ray beam is fully enclosed and shielded and the x-ray energy exceeds 50 kV *computerized tomography, irradiator, etc.*	IRSC
Radiation-producing equipment with open x-ray beam (i.e. no shielded enclosure) *Portable x-ray diffraction analysis system*	IRSC
Equipment containing sealed source *Gas chromatograph, liquid scintillation counter*	RSO *(under delegation from IRSC)*

At present there are two routes to purchase equipment depending on the equipment price. The review process from the RSO or IRSC should not take more than 1 week.

4.1 For equipment below $20K

Step 1: PI/responsible person creates a shopping cart on the procurement portal system. Once, the order is placed, the procurement system requests approval from the LEM team.

Step 2: LEM team reviews the information from the shopping cart and if the equipment is part of the list in Appendix 1 or is suspected to have a source of ionizing radiation, the information is forwarded to the RSO who reviews it.

OPTION 1 - Equipment does not contain a source of ionizing radiation

Step 3: RSO informs LEM that the purchase request does not need to be reviewed by the RSO/IRSC.

Step 4: LEM clears the shopping cart on the procurement system as per their procedure.

OPTION 2 - Equipment contains a source of ionizing radiation and the purchase request needs to be reviewed by the RSO

Step 3: RSO informs LEM that the purchase request needs to be reviewed by the RSO.

Step 4:	RSO reviews the purchase request, takes a decision (approve or reject) and prepares the IRSC Purchase Request Assessment report that is sent to the RCO. Note that if the purchase request is rejected, the RSO must include the reasons for rejecting the purchase in the report.
Step 5:	RCO distributes the report to all IRSC members.
Step 6:	RSO informs LEM of the decision. Note that if the purchase request is not approved, the RSO discusses the reasons for rejecting the purchase request with the LEM manager and PI/responsible person before the shopping cart is cancelled on the procurement system.
Step 7:	LEM clears the shopping cart on the procurement system if the purchase request is approved or rejects the shopping cart on the procurement system if the purchase request is rejected.
Step 8:	RSO, in consultation with IRSC, decides whether to amend the license or not.

OPTION 3 - Equipment contains a source of ionizing radiation and the purchase request needs to be reviewed by the IRSC

Step 3:	RSO informs LEM that the purchase request needs to be reviewed by the IRSC.
Step 4:	RSO reviews the purchase request and sends a summary report of the purchase request to RCO.
Step 5:	RCO distributes the documents to all IRSC members.
Step 6:	IRSC members review the documents and provide decision on proposed purchase request via email.
Step 7:	RCO or the RSO informs LEM of the IRSC's decision by email. Note that if the purchase request is not approved, the IRSC must provide the reasons for rejecting the purchase request to the LEM manager and PI/responsible person before the shopping cart is cancelled on the procurement system.
Step 8:	LEM clears the shopping cart on the procurement system if the purchase request is approved or rejects the shopping cart on the procurement system if the purchase request is rejected.
Step 9:	RSO, in consultation with IRSC, decides whether to amend the license or not.

Once the purchase has been submitted on the procurement system, the standard procurement procedure will follow. Note that shopping carts with value of less than $500 against a cost center get automatically approved by the system and it is the responsibility of the PI/responsible person to inform the RSO and/RCO of the purchase of equipment containing sources of ionizing radiation.

For equipment below $20K, the purchase review/approval process is summarized in Figure 1.

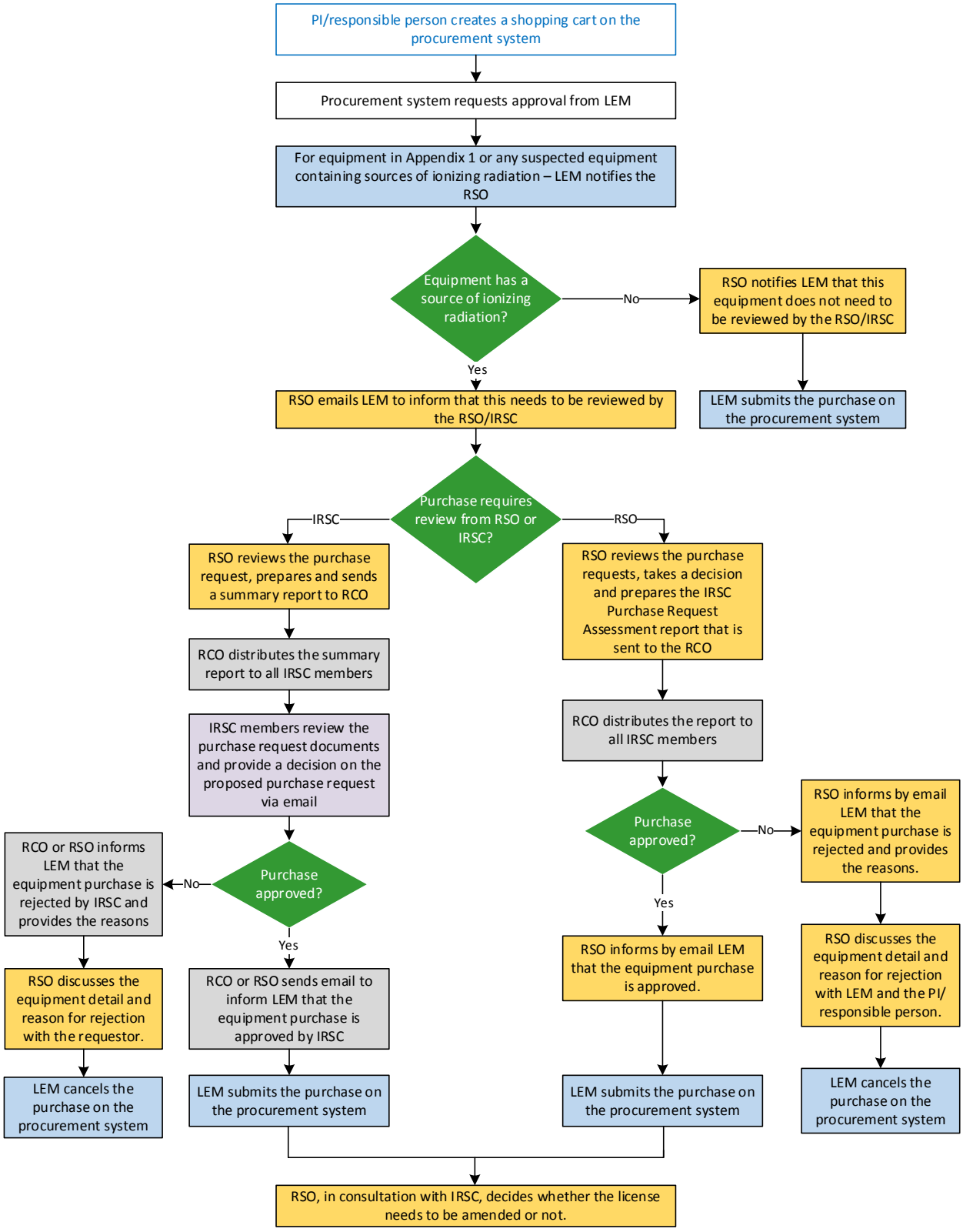

Figure 1. Purchase request process for equipment whose cost are below to $20K.

4.2 For equipment equal or in excess of $20K,

Step 1:	LEM receives the Funding Proposal for Scientific Equipment for review. If the proposal includes the purchase request for equipment containing a source of ionizing radiation (Appendix 1) or one of the equipment is suspected to contain a source of ionizing radiation, LEM forwards it to the RSO.

OPTION 1 - Equipment does not contain a source of ionizing radiation

Step 2:	RSO informs LEM and the PI/responsible person that the proposal does not need to be reviewed by the RSO/IRSC.
Step 3:	LEM manager completes the section regarding the maintenance strategy on the proposal and returns it to the PI/responsible person.

OPTION 2 - Equipment contains a source of ionizing radiation and the purchase request needs to be reviewed by the RSO

Step 2:	RSO informs LEM and the PI/responsible person that the proposal needs to be reviewed by the RSO/IRSC.
Step 3:	LEM manager completes the section regarding the maintenance strategy on the proposal and returns it to the PI/responsible person.
Step 4:	RSO reviews the proposal/purchase request and prepares the IRSC Purchase Request Assessment report clearing the purchase request for ASEPC review and sends it to RCO and PI/responsible person.
Step 6:	RCO distributes the report and proposal to all IRSC members.
Step 7:	PI sends the proposal to Research Operation for ASEPC review.
Step 8:	ASEPC reviews the application. ASEPC informs RCO by email (IRSC@kaust.edu.sa) of the decision and if approved ASEPC sends a copy of the shopping cart once it has been raised.
Step 9:	RCO forwards the email to the RSO who checks whether the license needs to be amended or not.
Step 10:	RSO, in consultation with IRSC, decides whether the license needs to be amended or not.

OPTION 3 - Equipment contains a source of ionizing radiation and the purchase request needs to be reviewed by the IRSC

Step 2:	RSO informs LEM and the PI/responsible that the purchase request needs to be reviewed by the RSO/IRSC.
Step 3:	LEM manager completes the section regarding the maintenance strategy on the proposal and returns it to the PI/responsible person.
Step 4:	RSO reviews the proposal/purchase request and sends a summary report of the proposal/purchase request as well as the ASEPC Application to RCO.

Step 5:	RCO distributes the documents to all IRSC members.
Step 6:	IRSC members review the purchase request documents and provide a decision whether to clear or not the proposed purchase request via email.
Step 7:	RSO prepares the IRSC Purchase Request Assessment report and send it to the PI/responsible person.
Step 8:	PI/responsible person sends the proposal to Research Operation for ASEPC review.
Step 9:	ASEPC reviews the application. ASEPC informs RCO by email (IRSC@kaust.edu.sa) of the decision and if approved ASEPC sends a copy of the shopping cart once it has been raised.
Step 10:	RCO forwards the email to the RSO.
Step 11:	RSO, in consultation with IRSC, decides whether the license needs to be amended or not.

For equipment equal or in excess of $20K, the proposal review process is summarized in Figure 2.

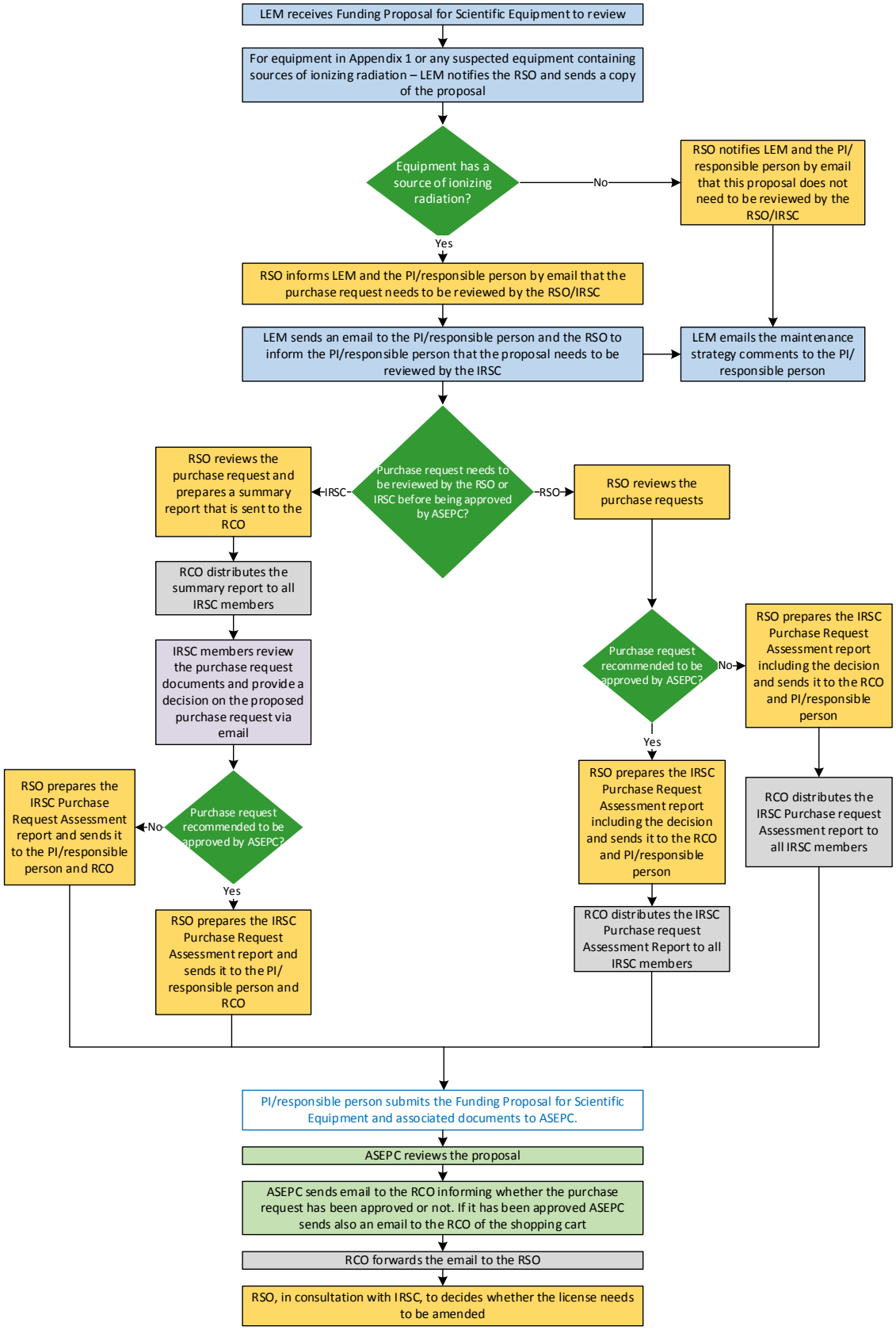

Figure 2. Purchase request process for equipment whose cost is equal or exceeds $20K.

Document History

REV	DATE	PREPARED BY	DESCRIPTION
01	Dec. 2018	D. Darios	New document
02	Apr. 2019	D. Darios	Add Definition section Correct grammar
03	June 2019	D. Darios	Add step 9 in section 4.1 and steps 9, 10 11 in section 4.2 to include notification from ASEPC whether a proposal is approved or rejected.

Appendix 1 – Table of Equipment Containing Sources of Ionizing Radiation

The table below provides guidance on the type of equipment present in KAUST research spaces that may contain sources of ionizing radiation. Note that all the items listed this table cost in excess of $20K and would therefore be routed to LEM via the Funding Proposal for Scientific Equipment.

	Device	Type of source	Example of manufacturers
1.	Scanning Electron Microscope (SEM)	X-ray tube	FEI, Carl Zeiss, Pemtron
2.	Transmission Electron Microscope (TEM)	X-ray tube	FEI,
3.	X-ray Diffraction Spectrometer (XRD)	X-ray tube	Brucker, Panalytical, Rigaku, Stoe & CIE Oxford Instruments
4.	X-ray Photoelectron Spectroscopy (XPS)	X-ray tube	Kratos Analytical, Enviro Analytical Instruments
5.	X-ray Fluorescence Spectrometer (XRF)	X-ray tube	Brucker, Panalytical, Horiba Jobin-Yvon, Olympus
6.	Electron Beam Lithography (EBL)	X-ray tube	Crestec, Jeol
7.	Rutherford backscattering (RBS)	X-ray tube	Kobe Steel
8.	Computed Tomography (CT)	X-ray tube	Metris, Brucker, Gulmay, XRE
9.	X-ray Irradiator	X-ray tube	Xstrahl
10.	Gas Chromatograph (GC) – detector (ECD and HID)	Sealed source	Thermo Scientific, Agilent
11.	Liquid Scintillation Counter (LSC)	Sealed source	Perkin Elmer