Do not use the following checklist to write your application. The following checklist is to help you verify that you have included the information necessary for your radioactive materials application before you upload the document. There are specific details in the guidance document not included in the checklist that are applicable to the application. If the checklist is used to write the application, your application's processing may be delayed.

The checklist is a high-level overview and does not necessarily include specific details for each item. It is meant to ensure only that you addressed each item necessary for the application. Details are discussed and provided for each individual item in the guidance document. The guidance document should have been used to write the application because it includes the details of what information is necessary to determine that the licensed materials will be used safely and will be properly secured. The checklist will help you to review your application to make sure that you have not forgotten to submit information regarding an item for the application.

Using the checklist, please review your application. When you have verified that you have included the information requested for an application, please proceed and follow the instructions to upload your application through the application portal and pay the application fee. Your application is not complete until the application is uploaded **AND** the fee is paid.

For future applications and payments, please make note of the following:

<u>Renewal applications</u> must be received by the DWMRC <u>at least 30 days prior to the expiration date listed</u> <u>on the license.</u> If not, your license may expire and you may be required to store or dispose of your radioactive materials until you can be issued a new radioactive materials license.

Annual fees are due each year on the month and day stated in the expiration date. If the license expires on March 31, 2025, an annual fee would be due on March 31, 2021, March 31, 2022, and so on. For this example, there would be no annual fee required on March 31, 2025 since a renewal is due that year.

If you have questions, please feel free to contact a member of the Radioactive Materials Section at 801-536-0200.

Checklist for 10 CFR 36 Irradiators Radioactive Material License Applications

Item No. and Title	Suggested Response	Yes
Item 1: License Action Type	You clearly stated what type of action you are requesting and provided the license number if the request involves an existing radioactive materials license:	[]
	• A NEW LICENSE application;	[]
	• An AMENDMENT (change) to one or more item(s) of an existing license.[Information for only the item(s) being changed are required to be submitted;]	[]
	OR A LICENSE RENEWAL Application for an existing Radioactive Materials License. [MUST BE RECEIVED by DWMRC at least 30 days prior to expiration date stated on license]. 	[]
Item 2: Name and Mailing Address of Applicant	• The legal name of applicant as registered with the UT Division of Corporations and Commercial Code is on the request. If operating under a "Doing Business As" company, the corporation's name and the DBA name is provided: Example: "ABC, Inc. DBA Company Operating Name"	[]
	• Full Mailing Address for applicant, including zip code, is provided.	[]
	• If separate Billing Address is necessary, Billing Address is provided.	[]
Item 3: Address(es) Where	 All "Location of Use" physical address(es) or location description(s)* (3 mi W of Power Plant on Hwy 10, City, UT) are provided. 	[]
Licensed Materials Will be Used or Possessed	Information showing or describing exact location of licensed materials are marked as protected [Sensitive-Security Related Information Protected Under 63G-2-201(3)(b)].	[]
	• Indication of use of devices at temporary job sites was provided.	[]
	 P.O. Boxes are not accepted for locations of use. Locations of Use are locations where materials are stored, used, prepared, etc excluding temporary job sites. 	[]
Item 4: Person(s) to be Contacted About the	Name of Individual(s) to contact for additional information for the application or clarification are provided	[]
Application	 Contact information for the named individual(s) provided – Telephone numbers (cell & office), email address(es) 	[]
	• A completed Delegation of Authority Form for each individual who is not a member of management but who is authorized to act on behalf of the applicant/licensee was provided.	[]

Items 1 through 4: Locations & Responsible Individuals

Item No,	Title & Criteria	Yes or N/A	Description Attached
5.	RADIOACTIVE MATERIAL Sealed Sources and Devices		
	• The applicant provided the manufacturer (or distributor) and model number of each sealed source to be used in each irradiator. For each source model, the applicant also identified the maximum activity per source.	[]	[]
	• The applicant provided the manufacturer (or distributor) and model number of each irradiator to be used. For each irradiator, the applicant identified the radionuclide, the source model number, maximum activity per source, and total possession limit being requested. If applicable, the applicant also identified any depleted uranium that is used as shielding (e.g. teletherapy units converted to nonhuman use), and specified the total amount in kilograms.	[]	[]
	• The applicant confirmed that the proposed sealed source or sealed source/irradiator combination (Category II dry-source storage) is registered with the NRC or an Agreement State and will be possessed and used in accordance with the conditions specified in the registration certificate. The applicant provided the SSD registry number with the application. [DO NOT submit a copy of the registration sheet.]	[]	[]
5.	Financial Assurance and Recordkeeping for Decommissioning		
	• The applicant committed that pursuant to R313-22-35(7)(a), the applicant will maintain records important to decommissioning and transfer these records to a DWMRC, an NRC, or Agreement State licensee, before licensed activities are transferred or assigned	[]	[]
	in accordance with R313-19-34(2). Furthermore, pursuant to R313-12-51(6), the applicant committed that prior to license termination, the applicant will forward the records required by R313-22-35(7)(a) to the DWMRC office before the license is terminated.	[]	[]
	AND • If financial assurance is required, the applicant submitted	[]	[]
	evidence of financial assurance following the guidance of NUREG–1757, Volume 3, (Current Revision), "Consolidated		

Item	Title & Criteria	Yes or	Description
No,	Decommissioning Guidance: Financial Assurance,	N/A	Attached
	Recordkeeping and Timeliness."		
6.	PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED		
	The applicant provided one of the following:		
	• The applicant provided a specific description of use for each type of irradiator requested, e.g., "For use in irradiation of products or food. There will be no irradiation of explosives and no irradiation of more than small quantities of flammable materials with a flash point below 60° Celsius [140° Fahrenheit] without specific written authorization from the DWMRC."	[]	[]
	OR		
	• If the irradiator will be used for purposes other than irradiation of food or products for human use or research purposes, the applicant provided a description of these purposes and safety analyses (and procedures, if needed) to support safe use were provided.	[]	[]
6	FOR IRRADIATION OF GREATER THAN SMALL QUANTITIES OF FLAMMABLE MATERIALS (evaluated on a case-by-case basis).		
	The following portions of this response are N/A if not needed.		
	If an applicant is applying for authorization to irradiate more than a small quantity of flammable material, the application included all of the following information:		
	 name of the flammable material that has a flash point below 60°C [140°F] and its flash point 	[]	[]
	• its flammable limit as percent by volume in air	[]	[]
		[]	[]
	• its specific gravity as a liquid	[]	[]
	• its vapor density relative to that of air	[]	[]
	• maximum quantity to be in the direct radiation beam in the radiation room at any one time	[]	[]

Item No,	Title & Criteria	Yes or N/A	Description Attached
	• description of the packaging for the product	[]	[]
	In addition, the applicant has provided ONE of the following:		
6		[]	[]
6	The applicant described why a single failure is unlikely to cause immobilization of the product being irradiated with the simultaneous inability to return the sources to the shielded position.		
	OR	гэ	ГЛ
	The applicant described why the ventilation system will prevent the concentration of vapor in air from exceeding the lower flammable limit in a significant volume of the room if the product is immobilized and the sources cannot be returned to the shielded position. If this second approach is taken, the applicant also provided a procedure to return the source to the shielded position, and remove the product from the radiation room if the ventilation system fails. The procedure identified the means to detect ventilation system failure.	[]	[]
7	INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY		
	PROGRAM Radiation Safety Officer (RSO)		
	The applicant provided the following:		
	• The name of the proposed RSO, including delegation of authority, who will be responsible for ensuring that the licensee's radiation safety program is implemented in accordance with approved procedures.	[]	
	AND		
	• The applicant provided documentation to demonstrate that the RSO has sufficient independence and direct communication with responsible management officials by providing a copy of an organizational chart, using titles of positions, demonstrating day-to-day oversight and coordination with management in radiation safety activities.	[]	[]
	AND		

Item No,	Title & Criteria	Yes or N/A	Description Attached
	• The applicant provided specific training and experience of the RSO. The applicant included the specific dates of certification or training, or both, in radiation safety.	[]	[]
	• The applicant provided the name of the proposed RSO, including delegation of authority, who will be responsible for ensuring that the licensee's radiation safety program is implemented in accordance with approved procedures.	[]	[]
7	AND		
	• The applicant provided documentation to demonstrate that the RSO has sufficient independence and direct communication with responsible management officials by providing a copy of an organizational chart, by position, demonstrating day-to-day oversight and coordination with management in radiation safety activities.	[]	[]
	AND		
	• The specific training and experience of the RSO. The applicant included the specific dates of certification or training, or both, in radiation safety.	[]	[]
	• The applicant provided documentation showing the RSO's training and experience specific to the irradiator that the applicant intends to use.	[]	[]
	• The applicant provided documentation to show that the RSO has obtained training in the regulatory requirements applicable to Part 36 irradiators.	[]	[]
	OR	L J	гл
	• The applicant provided alternative information demonstrating that the proposed RSO is qualified by training and experience (e.g., certification by the American Board of Health Physics, completion of a bachelor's or master's degree in the sciences with at least 1 year of experience in the conduct of a radiation safety program of comparable size and scope).	[]	[]
		[]	[]

Item No,	Title & Criteria	Yes or N/A	Description Attached
	• The applicant provided documentation to show that the RSO has obtained training and experience applicable to the regulatory requirements of Part 36 irradiators.		
8	INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS Initial Training for Irradiator Operators The applicant committed that before using licensed materials, irradiator operators will have successfully completed one of the training courses described in criteria in section 8.8.1 "Initial Training and Experience for Irradiator Operators" in NUREG-1556, Volume 6, (Current Revision), "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About 10 CFR Part 36 Irradiator Licenses."	[]	
	OR The emplicent provided a description of the initial training processor for		
	The applicant provided a description of the initial training program for irradiator operators that demonstrates compliance with the requirements of 10 CFR 36.51(a), (b), and (c).	[]	[]
	Reviews and Performance EvaluationsAnnual Training Regarding Safety Reviews for IrradiatorOperatorsThe applicant described their program for annual safety reviews and performance evaluations of irradiator operators that demonstrates compliance with 10 CFR 36.51(d) and (e).	[]	[]
	Training for Individuals Who Require Unescorted Access The applicant's program for instructing and testing unescorted individuals (other than irradiator operators) will be examined during inspections, but should not be submitted in the license application.	Need not be submitt with application	
	Training for Individuals Who Must Be Prepared to Respond to Alarms		be submitted
	The applicant's program for instructing and testing individuals designated to respond to alarms, as applicable, will be examined during inspections but should not be submitted in the license application.	with ap	plication

Item No,	Title & Criteria	Yes or N/A	Description Attached
9	FACILITIES AND EQUIPMENT General Description of the Facility and Site		
	• The applicant described the irradiator design by including information, diagrams, sketches, and photographs, as appropriate.	[]	[]
	• The applicant showed the locations of safety-related equipment and features as required in 10 CFR Part 36, "Licenses and Radiation Safety Requirements for Irradiators."	[]	
	• The applicant provided a construction schedule for the irradiator, as applicable, and updates as necessary.	[]	
	• Describe the site-specific testing frequency of all systems listed in 10 CFR 36.61, "Inspection and maintenance."	[]	
	 Access Control The applicant submitted specific information describing the access control system (panoramic irradiators) or personnel access barrier (underwater irradiators) and how it works, which demonstrates compliance with the requirements of 10 CFR 36.23. Specific drawings or sketches were submitted by the applicant, as 	[]	[]
	 appropriate. For panoramic irradiators, the applicant described the facility alarm systems. 	[]	[]
	• For panoramic irradiators, the applicant described the lock and key system for controlling source movement and discuss how it meets the requirements of 10 CFR 36.31(a).	[]	[]
	• The applicant described the site-specific testing frequency of access control systems (panoramic irradiators) or personnel access barrier (underwater irradiators).	[]	[]
	Shielding for Panoramic Irradiators		
	• The applicant described the shielding to be used and its composition.	[]	[]
		[]	[]

Item No,	Title & Criteria	Yes or N/A	Description Attached
	• The applicant submitted a diagram showing the configuration of shielding, including walls and the ceiling, and indicated the thickness of each and penetrations in the shielding.	[]	[]
	• If any accessible areas outside the shield are expected to have a dose rate exceeding 0.02 millisieverts (mSv) [2 millirem (mrem)] per hour, the applicant identified the areas and described how access to those areas will be controlled for radiation safety purposes.	[]	[]
	• For irradiators built in seismic areas, the applicant described the design requirements for maintaining radiation shield integrity during an earthquake, to include geologic and seismic site considerations (e.g. technical analysis) undertaken prior to construction.	[]	[]
	• For requests to possess more than 2 × 1017 becquerels [5,000,000 curies], the application submitted an evaluation of the effects of heating of the shield walls by the irradiator sources [see 10 CFR 36.39(a)].	[]	[]
	• The applicant described the site-specific testing frequency of the irradiator shielding as required by 10 CFR 36.57, "Radiation Surveys."		
	<i>Note:</i> For underwater irradiators, no response is required from the	No respons	se necessary
	applicant in a license application	for app	plication
	Fire Protection for Panoramic Irradiators		
	The applicant provided a description for:		
	• The type and location of the heat and smoke detectors to be used to detect a fire in the radiation room;	[]	[]
	• The alarms to alert personnel trained to summon assistance;	[]	[]
	• How the sources will automatically become fully shielded if a fire is detected;	[]	[]
	• How the heat and smoke detectors will be tested and the testing frequency.	[]	[]
	<i>Note:</i> For underwater irradiators, no response is required from the applicant in a license application	No response for applicati	•

Item No,	Title & Criteria	Yes or N/A	Description Attached
,	Radiation Monitors		
	• The applicant described the location and type of radiation monitors that will be used to meet the requirements of 10 CFR 36.23(c); 10 CFR 36.29, and 10 CFR 36.59(b).	[]	[]
	• The applicant described the location and types of alarms and those individuals who are trained to respond to those alarms. Use diagrams and sketches, as appropriate.	[]	[]
	• The applicant provided a discussion regarding the alarm set- points or the methods for establishing the alarm set-points.	[]	[]
	• The applicant described the evaluation performed to meet 10 CFR 36.39(e) on detector location and sensitivity and the acceptance testing that will be performed to meet 10 CFR 36.41(e).	[]	[]
	• The applicant described the site-specific testing frequency of radiation monitors.	[]	[]
	Irradiator Pools		
	The applicant described:		
	• The water-tight stainless steel pool liner. If no water-tight stainless steel liner or a liner metallurgically compatible with other components in the pool is used, explain why the pool has a low likelihood of substantial leakage and how decontamination could be accomplished, if necessary.	[]	[]
	• The high and low water-level indicators and their locations.	[]	[]
	• The purification system for the pool and explained why the purification system is considered capable of maintaining pool water conductivity less than 20 microsiemens per centimeter	[]	[]
	• The means to replenish pool water, including significant water losses from a position external to the radiation room when necessary.	[]	[]

Item No,	Title & Criteria	Yes or N/A	Description Attached
	• The barrier used during normal operations to prevent personnel from falling into the pool.	[]	[]
	• How high radiation doses from radiation streaming will be avoided when using long-handled tools or poles (use sketches if appropriate).	[]	[]
	• If the pool has outlets more than 0.5 meter below the surface that could allow water to drain out of the pool, the means of preventing inadvertent excessive loss of pool water (in this context outlets do not include transfer tubes between adjacent pools because the transfer tubes do not provide a means to allow water to drain out of the pools).	[]	[]
	• Describe the site-specific testing frequency of multiple regulatory required systems as listed in 10 CFR 36.61.	[]	[]
	Source Rack		
	• The applicant submitted procedures for ensuring source rack protection and testing frequency of the source rack protection system.	[]	[]
	• If the product moves on a product conveyer system, the applicant described the source rack protection to be provided to prevent products and product carriers from touching the source rack or mechanism that moves the rack.	[]	[]
	• Additionally, the applicant provided diagrams or sketches of those systems, if appropriate.	[]	[]
	Power Failures for Panoramic Irradiators		
	• The applicant described how the sources are automatically returned to the shielded position if offsite power is lost for longer than 10 seconds.	[]	[]
	• Describe how loss of power will affect the lock on the doors in the radiation room.	[]	[]
	• Describe how the access control system will operate properly if offsite power is lost. Describe how computer security features	[]	[]

Item No,	Title & Criteria	Yes or N/A	Description Attached	
	prevent an irradiator operator from commanding the computer to override the access control system.	1011	T tudoned	
	• Describe the site-specific testing frequency to ensure that sources are returned to the shielded position if offsite power is lost for longer than 10 seconds.	[]	[]	
	<i>Note:</i> For underwater irradiators, no response is required from the applicant in a license application	-	se necessary plication	
10	Audit and Review of Program			
	The applicant's program for reviewing the content and implementation of its radiation protection program may be examined during inspections but should not be submitted in the license application.	-	No response necessary for application	
	Survey Instruments			
	 The applicant has provided the following commitments: The applicant has committed to use survey instruments that meet the criteria in the section entitled 'Radiation Safety Program – Instruments' in the NUREG–1556, Volume 6, (Current Revision), "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About 10 CFR Part 36 Irradiator Licenses." 	[]	[]	
	 AND ONE OF THE FOLLOWING The applicant has committed that each survey meter will be calibrated by the manufacturer or other person authorized by the DWMRC, the NRC, or an Agreement State to perform survey meter calibrations. 	[]	[]	
	OR			
	• The applicant has committed to implement the model survey meter calibration program published in Appendix J "Model Radiation Survey Instrument Calibration" in NUREG–1556, Volume 6, (Current Revision), "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About 10 CFR Part 36 Irradiator Licenses."	[]	[]	

Item No,	Title & Criteria	Yes or N/A	Description Attached
	OR		
	• The applicant submitted alternative calibration procedures for NRC review.	[]	[]
	Radiation Monitors		
	The applicant provided a description of the type of monitors used to meet the requirements of 10 CFR 36.23(c); 10 CFR 36.29, and 10 CFR 36.59(b).	[]	[]
	Material Receipt and Accountability		
	• The applicant submitted a description of procedure(s) for ensuring material accountability.	[]	[]
	OR		
	• The applicant has committed to develop, implement, and maintain procedures for ensuring accountability of licensed materials at all times.	[]	[]
	AND		
	The applicant committed to comply with the NSTS reporting requirements as described in R313-15-1206.	[]	[]
	Occupational Dosimetry		
	The applicant has provided the following:		
	• The applicant has committed that film, TLD, or other dosimetry devices will processed and evaluated by an NVLAP-accredited processor.	[]	
	• The applicant has committed that film, TLD, or other personnel dosimetry devices will be exchanged at the required frequency and will be assigned to and worn by irradiator personnel.	[]	
	• The applicant has committed that other individuals, including visitors, entering a radiation room will be provided dosimetry in accordance with regulatory requirements.	[]	

Item No,	Title & Criteria	Yes or N/A	Description Attached
	Public Dose The applicant's program to control doses received by individual members of the public will be examined during inspection but should not be submitted in a license application.	No response necessary for application	
	Operating Procedures Routine Operations • The applicant provided summaries describing the radiation safety aspects of the written operating procedures listed in 10 CFR 36.53(a).	[]	[]
	 Non-routine Operations The applicant submitted one of the following: The applicant committed that the irradiator manufacturer or other person authorized by the DWMRC, the NRC or an Agreement State will perform non-routine operations such as source loading, unloading and repositioning, electrical troubleshooting of the control console, clearing stuck source racks, investigating and remediating removable contamination or leaking sources, (re)installing source cables, and other critical operations requiring special skills or having the potential for radiation overexposures. 	[]	[]
	OR • The applicant has submitted the information listed in Appendix G of NUREG–1556, Volume 6 (Current Revision).	[]	[]
	Emergency Procedures		
	The applicant provided emergency procedures or summaries, including a description of the radiation safety aspects of those items listed in 10 CFR 36.53(b).	[]	[]

Item No,	Title & Criteria	Yes or N/A	Description Attached
	 Leak Tests For Dry-Source-Storage Irradiators The applicant provided one of the following three alternatives: The applicant committed that leak tests will be performed at intervals not to exceed 6 months. The commitment included that leak tests will be performed by a service provider authorized by the DWMRC, the NRC or an Agreement State to provide leak testing services to other licensees. The applicant committed that leak tests may be collected by the licensee using instructions from the irradiator manufacturer (or distributor) and the leak test kit supplier. Such leak test kits will be supplied by an organization authorized by the DWMRC, the NRC or an Agreement State, to provide leak testing services. The applicant commits to maintaining records of leak test results not a part of decommissioning recordkeeping requirements for 3 years from the date of each test. 	[]	[]
	OR • The applicant has committed to implement the model leak test program published in Appendix M of NUREG–1556, Volume 6, (Current Revision), "Consolidated Guidance About Materials Licenses: Program-Specific Guidance About 10 CFR Part 36 Irradiator Licenses."	[]	[]
	 OR The applicant provided a description of alternative equipment and/or procedures for determining whether there is any radioactive leakage from sources contained in the irradiator. 	[]	[]
	Leak Tests For Pool Irradiators		
	The applicant submitted one of the following:		
	• The applicant provided a description of equipment, procedures, and sensitivity of method that will be used to check for contamination by analysis of a sample of pool water	[]	[]

Item No,	Title & Criteria	Yes or N/A	Description Attached
	OR • The applicant provided a description of equipment, procedures, and sensitivity of method that will be used to check for contamination by continuous monitoring	[]	[]
	Inspection and Maintenance The applicant provided a description regarding the inspection and maintenance checks, including the frequency of the checks, listed in 10 CFR 36.61.	[]	[]
	Transportation No response is needed from applicants during the licensing phase. However, before making shipments of licensed materials on its own in Type B packages, a licensee must ensure that it is in compliance with the general license requirements in 10 CFR 71.17 (Incorporated by reference into R313-19-100). Transportation issues will be reviewed during inspection.	No response necessary for application No response necessary for application No response necessary for application	
	Minimization of Contamination No response is necessary. The DWMRC will consider that the criteria have been met if the applicant's responses meet the criteria for the following sections: "Radioactive Material - Sealed Sources and Devices," "Facilities and Equipment - Irradiator Pools" (if applicable), "Radiation Safety Program - Operating Procedures," "Radiation Safety Program - Emergency Procedures," "Radiation Safety Program – Leak Tests," and "Waste Management - Sealed Source Transfer and Disposal."		
	Security Program No response is necessary. In accordance with R313-37, licensees that possess an aggregated Category 1 or Category 2 quantity of radioactive material must establish, implement, and maintain an access authorization program and a security program to ensure physical protection of the radioactive material.		

Item	Title & Criteria	Yes or	Description
No,		N/A	Attached
	WASTE MANAGEMENT Sealed Source Disposal and Transfer The applicant does not need to provide a response to this item during the licensing process. However, the licensee should establish and include waste disposal procedures in its radiation safety program and a decommissioning funding plan and cost estimate, if applicable. These issues will be addressed during inspection.	1	