

**Annexure-I: FORMAT FOR APPLICATION FOR GRANT-IN-AID
FOR NEW RESEARCH PROJECT**

(Please send two signed hard copies and word/pdf/scanned soft copy to Member Secretary, Advisory Committee for Safety Research (ACSR) with copy to Head, SRI, , Atomic Energy Regulatory Board, IGCAR Campus, Kalpakkam – 603102, Tamil Nadu. Applicants may please note that incomplete proposals may not be considered.)

1.	Project Title and Duration		
a.	Title of the Project		
b.	Duration of the Project	:	
2.	Details of Organisation		
a.	Name and Address of the Organisation	:	
b.	Department where Research is to be performed	:	
c.	Status of the organization (Whether Government or private)	:	
3.	Project Personnel		
a.	Principal Investigator		Photo
	Name and Designation	:	
	Academic Qualifications	:	
	Date of Birth	:	
	Telephone No. (O)	:	
	Mobile No.	:	
	E-mail Address	:	
	Previous Research Experience	:	
	Percentage of Time to be Spent on the Project	:	
	Recent Publications (within the last 5 years. Include earlier publications only if relevant to present proposal)		
(i)	In referred journals (Journals in which original articles are published)	:	
(ii)	Others	:	
b.	Co Investigators		Photo

		Name and Designation	:	
		Academic Qualifications	:	
		Date of Birth	:	
		Telephone No. (O)	:	
		Mobile No.	:	
		E-mail Address	:	
		Previous Research Experience	:	
		Percentage of Time to be Spent on the Project	:	
	Recent Publications (within the last 5 years. Include earlier publications only if relevant to present proposal)			
	(i)	In referred journals (Journals in which original articles are published)	:	
	(ii)	Others	:	
	c.	Details of Research Fellows/Associates, if any, supported by agencies such as DAE, CSIR etc. who are not recruited under this project but will participate in the project work	:	
4.	Is the Principal Investigator/Co-investigator likely to go abroad? If yes, what is the duration and Name of the person who will carry on the research programme in his absence		:	
5. Scientific Background of the Project				
	a.	Importance of the Problem	:	
	b.	Related Work already Performed or in Progress at your Organization.	:	
	c.	Similar/Related Work in Progress or already Performed at other places in India or Abroad.	:	
6. Details of the Project				
	a.	Scientific Scope of the Research Scheme (up to 400 words)	:	
	b.	Detailed Work Plan for First year, indicating Proposed Methods/Techniques to be used.	:	
	c.	Work plan for the consecutive years	:	
7.	Deliverables of the project.		:	
8.	Important mile stones and time schedule of the project		:	

9.	Details of projects already negotiated by the Principal Investigator and Co-investigator with any Funding Agency, including AERB (Details to be provided as per table below in each case)			
	a.	All projects submitted in last 3 years, indicating agency to which submitted.		
	b.	Projects currently under negotiation by Principal Investigator/Co-investigator with agencies for which decision is awaited.		
	c.	Projects currently being conducted by the Principal Investigator/Co-investigator.		

S. No.	Title	Funding Agency	Amount Sanctioned	Present Status

10. Budget Estimate for the Project

Budget head	1 st year	2 nd year	3 rd Year	Total
Staff Salary				
HRA				
Equipment (Give the list and Price for each item & justification)				
Consumables (Give list of items)				
Contingencies				
Computer Charges (if any)				
Overheads (15% excluding contingencies)				
Total				

11. Project funding (indicate as a %)

- a. Amount to be contributed by the Organisation

..... %

- b. Amount expected from Other Sources (name of the sources and items)

..... %

- c. Amount requested from AERB for this Project

.....%

Certificate

The terms and conditions of the grant-in-aid are acceptable to us and all facilities of the organization will be available for conducting this research scheme.

Signature of the
Principal Investigator

Signature of the
Head of the Organization

Name

Name

Designation

Designation

Date

Date

Seal of the Principal Investigator

Seal of the Organisation

Annexure-II: UNDERTAKING FROM ORGANIZATION
(Certificate from the Head of the Organization of PI)

Project Title:

1. Certified that this organization agrees to the participation of

PI	CI
Prof. /Dr.	Prof. /Dr.
Designation	Designation
Address	Address

For the above project which is being submitted for financial support to AERB, Mumbai.

2. Certified that the infrastructural facilities related to the project activity available in this organization including equipment, manpower and other facilities will be extended for the project.
3. Certified that the management takes the responsibilities for the timely submission of audited statement of accounts and utilization certificate, details of staff recruited and equipment purchased and other related information under project. In case there is delay in establishing this, responsibility of submitting the UC and Technical report is ensured by Head of Organisation.
4. Certified that if PI is not able to execute the project due to some reason (retirement, resignation, transfer, etc.), CI or any nominee from the Organisation executes and completes the deliverables identified in the proposal.
5. Certified that no paper will be published/presented in any journal/conference/symposium/workshop/seminar related to the project without obtaining written permission from AERB.

Date:

Name & Signature of Head of Organization

Place:

Seal

**Annexure–III: REQUEST FOR RELEASE OF GRANT-IN-AID (First Installment) –
CLAIM FORM I (YEAR: 20 - 20)**

(To be filled and submitted in duplicate within one month of receiving sanction letter)

To
The Member Secretary,
Advisory Committee for Safety Research (ACSR)
Safety Research Institute (SRI), AERB
IGCAR Campus, Kalpakkam - 603102
Tamil Nadu

Title of the research project :

Sanction letter No. and date :

Name of the Organisation :

Particulars	Staff Salary	Equipment	Consumables	Computer Charges	Contingencies	Overheads	Total Amount
Amount Sanctioned							
Amount Claimed Now							

Details for transfer of grant by NEFT:

Name of Bank	Branch Name	Account Name	Account Number	IFSC Code	Cash Credit or Current A/c

ACCEPTANCE FORM

The terms and conditions of grant-in-aid communicated by AERB are accepted:

Signature of the Principal Investigator

Name :

Designation:

Date:

Seal of the Principal Investigator:

Signature of the Head of the Organisation

Name:

Designation:

Date:

Seal of the Organisation:

Annexure–IV: ACCEPTANCE CUM RECEIPT

(To be filled & submitted within 15 days of receiving the grant)

To
Member Secretary
Advisory Committee for Safety Research
Safety Research Institute (SRI), AERB
IGCAR Campus, Kalpakkam - 603102
Tamil Nadu

Subject: Sanction No. _____ dated _____ for total grant-in-aid of Rs. _____ for 1/2/3 year duration from 20____ to 20____ for the safety research project titled _____

Sir/Madam,

- 1) The terms and conditions of the grant-in-aid communicated by AERB are accepted.
- 2) The first/second/third year grant has been received in the organization.
- 3) Date of commencement of the project: _____

Signature of the Principal Investigator
Name :
Designation:
Date:
Seal of the Principal Investigator:

Signature of the Head of the Organisation
Name:
Designation:
Date:
Seal of the Organisation:

Annexure – V: APPLICATION FOR ANNUAL GRANT FOR SANCTIONED RESEARCH PROJECT (Please indicate whether it is the 1st, 2nd etc.)

(Please send 2 signed copies along with report & publications and word/pdf/scanned soft copy to Member Secretary, ACSR, Safety Research Institute (SRI), AERB, IGCAR Campus, Kalpakkam – 603102, Tamil Nadu ,)

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1. Title of the research project:
 - a. Number and Date of First Sanction of Scheme:
 - b. Date of Actual Commencement of Work:
Reason for difference between sanction and actual commencement, if any.
Department where Research is being Performed:
Name and Address of the Organization:
-

2.
 - a. Principal Investigator
Name :
Position held :
 - b. Co-investigator(s)
Name :
Position held :
 - c. Research Fellow(s) Recruited for the Project and their Date(s) of Joining.
Name :
Date of joining :
-

3. Is the Principal Investigator/Co-investigator likely to go abroad? If yes, what is the duration and Name of the person who will carry on the research programme in his absence?
-

4.
 - a. Name, Designation and Address of the Person to whom formal correspondence be made.
 - b. Telephone No.
 - c. E-mail Address
-

5. List of Major Equipment already Procured/Fabricated.

AERB Inventory No.	Date of Purchase	Description of Equipment	Name of Supplier	Price Paid (Including Taxes)	Remarks, if any

6. The summary should include all work done to date. Detailed technical report prefaced by a summary highlighting major achievements is to be enclosed with each copy (500 words)
-

7. a. Deviations, if any, from the programme of work and expenditure originally approved.
- b. Reasons for above.

-
8. List of papers and copies of papers published/communicated is to be included with each copy.
-

9. Details of Grant:

	Year wise Received ()	Year wise Actually Spent ()	Commitments Pending Payments upto 31 st March of the Current Year	Grants requested for the Next Year
Staff Salary (Research Fellows and Associates)				
Equipment (Give list of major items and their individual cost)				
Consumables (indicate type of Consumables and their individual cost)				
Contingencies				
Overheads				
Interest accrued				
Total:				

10. Project Personnel and Estimated Percentage of Total Working Time Devoted to the Project.

Personnel	Time (%)	Estimated cost (Rs.)

11. Highlights of Detailed Programme Report of work completed covering procurement of equipment, its utilization, experiments conducted, literature survey, theoretical work, papers published/presented in conferences, etc.

- a. Adherence to important milestones with time schedule. Reasons for deviations, if any, and revised time schedule.

b. Detailed Plan for the Next Year.

Signature of the Principal Investigator

Name:

Designation:

Date:

Seal of the Principal Investigator:

Signature of the Head of the Organisation

Name:

Designation:

Date:

Seal of the Organisation:

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Annexure – VI: REQUEST FOR RELEASE OF GRANT-IN-AID (Second and Subsequent including Final Year) CLAIM FORM II (YEAR: 20XX- 20YY)

(To be filled and submitted in duplicate within one month of receiving the sanction letter)

The Member Secretary
Advisory Committee for Safety Research
Safety Research Institute (SRI), AERB
IGCAR Campus, Kalpakkam - 603102
Tamil Nadu

Title of the research project :
Sanction letter No. and date :
Name of the Organization :

Particulars	Staff Salary	Equip-ment	Consum-ables	Computer Charges	Continge-ncies	Overheads	Total Amount
Amount Sanctioned							**
Unutilized Balance if any, from Previous Years/ Installment							
Net Amount Claimed Now							

**** should also include the bank interest, if any, earned during the year**

Details for transfer of grant by NEFT:

Name of Bank	Branch Name	Account Name	Account Number	IFSC Code	Cash Credit or Current A/c

Name:

Name:

Designation:

Designation:

Date:

Date:

Seal of the Principal Investigator:

Seal of the Organization:

Annexure–VII: UTILISATION CERTIFICATE

Certified that grant-in-aid (***including bank interest earned during the year, if any***) of Rupees _____ (Rs. _____) sanctioned by the Atomic Energy Regulatory Board, Niyamak Bhavan, Anushaktinagar, Mumbai - 400 094 vide their letter No. _____ dated _____ and already paid in the month of _____ for the years has been fully / partly utilised during the financial year (20XX-20YY) to meet the expenditure on _____ and there is balance of Rs. _____ of the Grant as on _____.

Principal Investigator

(Seal)

Date

Audit Officer/Chartered Accountant

(Seal)

Date

Annexure-VIII: AUDITED STATEMENT OF ACCOUNTS
(To be submitted at end of each year of the Project)

	Amount received			Amount Spent		
	1 st Year (-)	2 nd Year (-)	3 rd /Final Year (-)	1 st Year (-)	2 nd Year (-)	3 rd / Final Year (-)
Staff salary						
Equipment						
Consumables						
Computer charges						
Contingencies						
Overheads						
Bank Interest earned						
Total						

Principal Investigator
Date

Auditor / Chartered Accountant / A.G.
Date

(Seal)

(Seal)

Remarks:

Annexure-IX: INVENTORY OF EQUIPMENT

Inventory of equipment purchased for the project entitled:

1.	AERB sanction number and date	
2.	Amount sanctioned for equipment	
3.	List of equipment sanctioned for project	1. 2. 3. 4.

4.	Details of equipment procured					
	AERB Inventory No.	Name of the equipment	Name of the Supplier	Date of Purchase	Amount	Remarks

Project Investigator

Head of the Organization

Date

Date

Seal

Seal

Annexure-X: FORMAT FOR THE CONSOLIDATED FINAL REPORT

(2 hard copies through Head of Organization along with pdf/scanned/word document to AERB)

TITLE OF PROJECT & NAME OF THE INSTITUTE

1. Name and Address of the institute:
2. Title of the Project, Reference No. and Date of first sanction:
3. Name, Designation and Full address including E-mail address and Phone No. of the Principal investigator and Co-investigator of the project:
4. Date of Commencement of actual work on the project:
5. Details of the grant (name and designation of staff, name and cost of equipment, consumables (give heads) received during the tenure of the Project:

Name	Designation	Date of joining	Date of Resignation

Details of Grant

Budget Head	Sanctioned		
	1st YEAR ()	2nd YEAR ()	3rd YEAR ()
Staff Salary (JRF & SRF)			
Equipment			
Consumables			
Analytical Characterization			
Contingencies			
Computer Charges			
Overheads			
Total			

6. Detailed Technical report of the Entire Work done on the Project

S. No.	Contents	Page No.
1.		
2.		
3.		

LIST OF FIGURES

S. No.	Figures	Pg. No.

LIST OF TABLES

S. No.	Tables	Pg. No.

DETAILED TECHNICAL REPORT

1. Scientific background of the project
2. Literature review
3. Scientific scope of the research project
4. List of deliverables as defined in the proposal
5. Equipment purchased
6. Methods & materials
7. Investigations undertaken
8. Experiments carried out
9. Results and discussion
10. Deliverables achieved with reference to initial proposal. Justification for deviation, if any.
11. Conclusion for the completed work
12. Impact of above studies on nuclear/radiation safety
13. Deliverables yet to be met including yearly plans
14. Bibliography
15. Publication in refereed journals
16. Other publication including paper presented in symposium or conferences
17. Whether any of the staff was awarded research degree on the basis of the work carried out on the project, if so, degrees, title of the thesis and the years of the submission/ award
18. Particulars such as the title of the project, funding agency, duration of any other project under your charge in similar areas
19. Details of all the previous DAE/AERB and other schemes under your charge (scheme title, total funds, duration).
20. Brief summary of achievements in not more than 300 words
21. Other specific remarks/suggestions

22. Annexures to be added to include the project monitoring activity, such as
- a) Presentation of progress to CSRP with date and outcome
 - b) Visit of coordinator to PIs institute or vice versa with dates and minutes of technical discussions.
 - c) Photographs of equipment/lab/PI/Co-Pi and research staff working on the project.

Annexure-XI: BRIEF REPORT ON ACSR-AERB FUNDED PROJECT

(pls submit word as well as pdf file)

Sanction Number: pls attach soft copy of the first approval and project proposal	
Date of Start:	<div style="border: 1px solid black; padding: 5px; width: 100px; margin: 0 auto;"> Insert Passport size </div>
Date of Completion:	
Date of submission of final consolidated report: Pls attach soft copy	
Duration of project as per initial sanction (in years):	
Total duration taken for completing the project, indicate extension approval (if any) and reason for extra duration: Pls attach copy of extension approval	
Total Amount Sanctioned (in Lakhs):	
Amount Received (in Lakhs with date):	
Amount utilized and consolidated UC (in Lakhs): Pls attach copy of final UC and SOE	
Title:	
Name of PI & Affiliation: (Name, Designation and Full address including E-mail address, Phone No.)	
Name of CI & Affiliation:	
Name of PC & Affiliation:	
Name of major Equipment procured and their cost : Present working status of the Equipment: Number of other users & their affiliation and % use by others	
Details of the High cost consumables used	
Patent with brief description (if any)	
Number of Journal Publications with impact factor (attach list as Annex- I): Number of symposia presentations:	
Number of staff trained under the project:	
List of Objectives as mentioned in original proposal <i>(List accomplishments/ short falls against each of the objectives)</i>	
Accomplishments of the projects in 3 to 4 bullets Summary in about 300 words (which is understandable by general scientific fraternity) bringing out the novelty of the work. Insert two photographs representing outcome of the project.	

Signature of PI with date

**Annexure-XII: FORMAT FOR COMPENDIUM ON SAFETY RESEARCH PROJECTS
FUNDED BY AERB**

1. Introduction & Brief Details of the Project

Project No.	
Project Title	
Principal Investigator	
Project Co-ordinators	
Amount Sanctioned from AERB	
Amount utilized	
Equipment purchased for the project	
Sanctioned duration	
Starting date	
Date of completion including report submission	
Extension granted, if any and its duration	

2. Objectives of the project

3. Deliverables of the project

4. Outcome summary of the project

5. Achievements of the project and usefulness of deliverables for AERB

6. The following publications have been brought out during the course of this project in referred journals

7. Actions taken / suggested for utilising the outcome of Project

Annexure-XIII: AREAS OF RELEVANCE TO AERB

Safety Studies in the areas of nuclear energy and radiation facilities are of relevance to AERB, out of which, a few areas / topics are indicated below. Please refer to the AERB website for updated list of areas of research.

1. **Generic Areas:** Nuclear Reactor Physics & Engineering, Multi-component / Multi-phase / Multi-scale phenomena in Reactor Thermal Hydraulics / Fluid Structure Interactions / Accident Studies in Nuclear Reactors / Critical Heat Flux (CHF) Studies, Nuclear Fuel Safety Studies, Deterministic and Probabilistic Safety Studies for Nuclear Reactors, In-Vessel and Ex-Vessel nuclear accidents, Validation of NPP models, Aging of Nuclear Reactors, Human & Organizational Technical (HOT) Factors for Nuclear/Radiological Applications, Safety Culture, Integrated Nuclear/Radiological Safety Management Systems.
2. Environmental / Radiological Impact Assessment (RIA) - Experimental studies on Atmospheric dispersion using tracers under different stability conditions
3. Development of methodologies for the removal of Fission Products (Cs, Iodine, Ruthenium).
4. Radioactive Waste Management and Final Disposal.
5. Civil, Geotechnical and Structural Engineering.
6. Experiments to simulate sodium fire for estimation of pressure rise in the containment and validate with available codes.
7. Study of Synergistic Effect in Equipment Qualification based on Test and Analysis.
8. Effect on Performance of Microprocessor and FPGA based Digital Devices in Nuclear Radiation Field.
9. Assessment of state-of-art methodologies on design of RCC structure for secondary loads: Temperature, Creep and Shrinkage.
10. Effect of material degradation during NPP operation on its fatigue-ratchet behavior.
11. Study of phenomenon of Core Disruptive Accident in Fast Reactors.
12. Application of electrochemical techniques in the evaluation of material ageing and life extension of nuclear facilities
13. Hydrogen mitigation studies.
14. Thermodynamic behaviour of corium at high temperatures.
15. Probabilistic Assessment of Reactor Overpower Protection System (ROPS) in Indian PHWRs.
16. Development of methodology for taking into account of ageing into PSA models.
17. Application of Risk Informed Decision Making Methodologies.
18. Software Reliability of Digital I&C for NPPs.
19. Hydrodynamic load on stability analysis of spent fuel trays stack during seismic event.
20. Effect of NPP component ageing mechanism on its fatigue-ratchet behavior.

21. Aerosol behaviour in containment under accident conditions for establishing the plate-out factors towards aerosol removal.
22. Studies on spray cooling of the BWR core under low flow conditions.
23. Development of integrated tool for source term estimation, dispersion and dose assessment.
24. Nuclear fuel behaviour code for steady and transient nuclear and thermo-mechanical behavior of fuel rods.
25. Experiment to determine flammability limit of heavy hydrogen and CO.
26. Study of passive system reliability.
27. Development of CFD model to study the effect of spray cooling on “steam concentration and aerosol particles” in the containment.
28. Radiation protection: Medical / Industrial Applications of Radiation
29. Applied Metallurgy / Radio metallurgy for Nuclear/Radiological Applications.
30. Use of Radiation Sources for Research Purposes
31. Radiobiology / Radiation Dosimetry / Radiation Protection
32. Transport of Radioactive Material
33. Integration of HOT factors in PSA of NPPs
34. Bio-remediation of contaminated soil and water.
35. Corium chemistry and severe accident progression.
36. Radiation Protection and Radiological Risk Assessment
