NSF Solicitation: Design and Construction of Regional Class Research Vessels (RCRV)

Last Update: August 28, 2012

In April 2012, NSF released a solicitation for Design and Construction of RCRVs. The NSF soliciation is available at:

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503607&org=NSF&sel_org=NSF&from=fund

Questions regarding the solicitation should be directed to the UNOLS Office at office@unols.org . The UNOLS Office will send the questions to NSF and NSF representatives will prepare responses. The RCRV solicitation questions and responses will be posted on this website (below) so that all interested parties will be provided with the same information.

Community questions regarding the solicitation with NSF responses are posted below:

Question # 1: For the RCRV solicitation if a UNOLS operator doesn't have design and construction experience, is it acceptable to go outside the institution and hire this experience and skill set?

NSF Response: Yes. It is anticipated that proposing institutions will have to assemble a team with the necessary experience and skill sets to successfully execute the RCRV project and that those skill sets may not be resident within the institution. Note also that an institution is not required to have construction experience per se, but should provide information on research vessel experience as described under "Proposal Deliverables", Part E. 2.

Question # 2: Does this solicitation allow for a consortium to be formed among different UNOLS operators?

NSF Response: The formation of a consortium as part of the project team is not prohibited. However, the roles and associated costs/benefits to the project would need to be clearly articulated in the Project Execution Plan; namely the Organizational Structure, Project Baseline (Scope, Cost, Schedule) and the Work Breakdown Structure (WBS). Furthermore, inclusion of a consortium would in no way negate the requirement for a separate operator selection process as described in the Design and Construction solicitation.

Question # 3: It appears that some of the Guidelines of Section 5 of the manual are now available on the web. Will the guidelines on page 56 of the manual be available soon?

NSF Response: The following guidelines related to the Larger Facilities Manual have been added to the "Government Furnished Information; NSF Manuals and Guidelines" link as follows:

7. Guidelines for Planning, Use, and Oversight of Contingency in the Construction of Large Facilities
8. Definition and Use of Contingency Resources in NSF Facility Construction
9. Guidelines for Development of Project Execution Plans for Large Facilities
10. Cyber-Security Best Practices
11. Guidelines for Reviews of Large Facilities
12. Environmental Compliance
13. Timeline for Planning and Managing the MREFC Account
14. Guidelines for use of OMB Inflators in Planning Construction of Large Facility Projects

Question # 4: In section 2.i. (Z-drive and DP) of the "NSF Determinations on the FIC Response to RCRV Design" document, an action statement is made to "Change main propulsion to azimuthing drives (Z or L-drive). Please clarify the meaning of "azimuthing drives". Does this also include cycloidal propulsion solutions such as the Voith Schneider Propeller?

NSF Response: Yes. Since cycloidal drives have the ability to direct full thrust 360 degrees without the use of rudders, NSF would consider them azimuthing-type drives. With regard to Questions 2 through 5, the proposing institutions are required to include a revised draft concept design with the proposal showing how NSF determinations have been (or will be) incorporated. They are also required to include an estimated daily rate. Both of these deliverables should include discussion and impacts (positive and/or negative) from proposed propulsion system options.

Question # 5: In section 3.ii. (Bow Thruster) of the "NSF Determinations on the FIC Response to RCRV Design" document, statements are made concerning thruster noise and thruster room space claim concerns. Please clarify that NSF will consider the use of alternate bow thruster technologies that can, in addition to a standard tunnel thruster configuration, provide a dropdown azimuthing solution, eliminate the need for a thruster room, and

further offer significant noise and vibration reduction.

NSF Response: Alternate bow thruster designs are a subject of re-examination during Project Refresh per Section 3.v. Alternate bow thrusters arrangements may also be evaluated within the context of NSF Required Action #20, evaluation of commercially available "Green Ship" technologies; particularly if data can be provided to show improved URN and airborne noise performance from an alternate design.

Question # 6: In section 4.iii. (Power) of the "NSF Determinations on the FIC Response to RCRV Design" document, statements are made concerning sea keeping, stabilization, and the use of flume tanks. Would NSF consider the use of a roll stabilization system integrated with the primary propulsion system that completely eliminates the need for stabilizer fins and/or flume tanks?

NSF Response: Yes. Any reduction in space, weight or additional system requirements would be considered advantageous to the RCRV design. A flume tank is currently the preferred method of stabilization due to simplicity, but NSF recognizes their inherent limitations and impacts on the design. Please note that a full re-evaluation of RCRV sea-keeping characteristics is not required as part of the Project Refresh. However, if any option to the flume tank were proposed, the institution would need to provide (as a minimum) data showing that the alternate solution was at least as effective as a flume tank. The institution should also note any potential impacts on construction and/or operational cost (Normal Maintenance and Repair and/or Major Overhaul) in the initial construction and daily rate estimates provided with the proposal.

Question # 7: In section 8. (Underwater Radiated Noise) of the "NSF Determinations on the FIC Response to RCRV Design" document, statements appear to relieve the requirements of ICES for less stringent limits. Would NSF offer consideration during proposal evaluation to a vessel system design that was capable of performing to more stringent URN standards?

NSF Response: Yes. The URN criteria shown is the minimum requirement assuming that an azimuthing drive with inherent lower gear noise is used. Any reductions in URN below this requirement would generally be considered advantageous. However (as above), any impact on construction and/or operational cost should be incorporated into the estimates provided.

Question # 8: In the "Program Solicitation", 3rd paragraph of the "Synopsis of Program" it states: "The

proposing LI should demonstrate its ability to leverage planning and construction of the RCRV's to advance academic research; support investments in faculty development and graduate/undergraduate education; and engage in collaborative research." Does this mean the proposer needs to show how managing the procurement of three vessels is going to do the listed things, or is NSF looking for the proposer's view of how the vessels once in service will advance academic research; support investments in faculty development and graduate/undergraduate education; and engage in collaborative research? No expanded description of this requirement appears in the remainder of the solicitation.

NSF Response: Potentially both. This solicitation is specifically for design and construction of the RCRV. As a minimum, the proposal should describe how an institution's engagement in this part of the project would help it to leverage advancements in oceanography, faculty development, education and collaborative research. The solicitation does allow the Lead Institution to provisionally operate one of the vessels. As a result, it is also possible for an institution to describe how operating the vessel would promote these things if so proposed.

Question # 9: In the synopsis, third paragraph, the solicitation states: "Organizations responding to this program solicitation may, at their discretion, include a proposal to operate the first RCRV for a period not to exceed five (5) years, provided that it shall (1) operate the vessel in the appropriate geographic region based on coastal and near coastal science utilization at the time of delivery, and (2) operate the vessel with the highest degree of economic efficiency within that region." In the detailed description of the proposal deliverables and organization there is no reference to any proposal for operating the first vessel. What is required to be included in the proposal to operate the first vessel, where should this portion of the proposal be located (in a separate section or as part of some other section) and is this proposal to operate the first vessel included as part of the page limitation?

NSF Response: The desire to operate the first RCRV can be imbedded into sections of the full proposal as deemed appropriate by the proposing institution. Verbiage should describe the institution's intention and ability to operate the vessel under the two conditions from the solicitation given above. NSF envisions that the desire to operate the first RCRV (or not) would impact (as a minimum) deliverables A, C, D and F. Discussion of operating the first RCRV would count against the total page limit.

Question # 10: Is there any inherent advantage to being selected as the lead institution for this solicitation with regards to selection as an operator of a vessel?

NSF Response: The institution should describe their own views regarding any inherent advantages in their proposal. The Panel(s) would then consider as part of their final recommendation to NSF.

Question # 11: If the first vessel is not located in the lead institution's "region" will being the lead institution provide any advantage in the competition for the second or third vessel?

NSF Response: Operator selection for follow-on vessels will be conducted under a separate competition as indicated in the solicitation. Note that Deliverable F only asks for cost estimates for one (1) RCRV. As above, the Lead Institution should describe their own views regarding any inherent advantages in their eventual proposal for operator selection, assuming the institution decides to compete for follow-on vessels. The Panel would then consider as part of their final recommendation to NSF.

Question # 12: If a proposal responding to this solicitation includes operation of the first vessel, and that proposal is selected, will the lead institution automatically become the operator of the first vessel?

NSF Response: Yes.

Question # 13: The one word answer to question 12 appears to contradict the express language of the RFP. The lead paragraph on page 2 does state that the LI may include a proposal to operate the first ship. However, it goes on to say that NSF will decide what region the ship will operate in, and must "operate the vessel with the highest degree of economic efficiency within that region." If a Pacific coast institution becomes the LI, but NSF decides the vessel will be assigned to the Gulf of Mexico, how could the Pacific coast school operate a ship more efficiently than a Gulf coast institution with an established pier/warehouse infrastructure? Either the answer to question 12 should be changed to "maybe" or the language of the RFP should be clarified.

NSF Response: NSF does not believe there is a conflict between the language and the response. As stated in the question, the solicitation wording is: "operate the vessel with the highest degree of economic efficiency within that region"; not "operate the vessel

as efficiently as an institution within that region" as is inferred. NSF's primary objective of this solicitation is the design and construction of the RCRV, not vessel operation. This may differ from the objectives of the proposing institutions. NSF will position the vessel where it is most needed to meet science utilization demands at the time of delivery. It is up to the institution to decide if it also wants to propose operating the lead vessel under this condition, as opposed to waiting to compete for the operation of any follow-on vessel(s). Waiting might likely lead to the current model of individual operating institutions, which may or may not be the most efficient or effective for a class of Regional vessels. If an institution does propose to operate the lead vessel, the institution should clearly articulate how they will operate the vessel as efficiently as possible, including how daily rates might be affected based on decisions by NSF on vessel positioning and the organizational structure proposed. For the example given above, NSF's expectation would be that the proposing Pacific Coast institution would illustrate in their proposal how it might most efficiently operate an RCRV positioned in the Gulf of Mexico. One of many possible solutions might be a prior agreement with a Gulf Coast institution. See response to Question 2 on the UNOLS website (NSF Response to Question 2, Week of April 30th). This scenario might lead to a different organizational model than is currently used for the Regional vessels.

Question # 14: Question: Will a proposal be considered unresponsive if all of the actions specified in the NSF determinations document are not incorporated or if alternatives are proposed in the revised GA?

NSF Response: No, it would not be considered unresponsive. However, the Panel will be tasked with evaluating the extent to which the NSF determinations have been incorporated into the design when making their recommendations to NSF (See Programmatic Review Criteria in the solicitation). The institution should clearly articulate the effect on appropriate sections of the Project Execution Plan and/or proposal deliverables (such as vessel capabilities, cost and daily rate) if deviations from the NSF determinations are proposed.

Question# 15: Can the proposal contain an institutional offer of guaranteed institution provided ship -days? Will this offer of guaranteed ship-time be considered by NSF as enhancing the proposal?

The proposal can contain an offer of institutional ship-days assuming the institution proposes to operate the lead vessel. The number of ship days can either be fixed annually, or a range of days which average out over several years, depending on institutional requirements and the eventual ship's schedule. However, NSF's focus on this solicitation is design and construction; not operator selection. An offer of institutionally provided ship time is not listed as a one of the programmatic review criteria under this solicitation and, as a result, will not be considered a discriminator for LI selection.

Question #16: Item 8 on Underwater Radiated Noise refers to enclosures 7 through 10, "discussion papers and a comparative URN curve for these projects are attached". The RCRV website does not provide any of the items noted. Can these items be provided?

NSF Response: Enclosures 7 through 10 were items NSF provided to FIC to support their review and aren't relevant to the solicitation. However, the SIKULIAQ URN curve (which was one of the enclosures) is relevant since that represents the URN goal for RCRV. The SIKULIAQ curve, along with the comparison of URN criteria provided to FIC, will be posted on the Government Furnished Information web site.

Question #17: If NSF determinations are followed causing science or public spaces to be included above the Main Deck, does the vessel design need to incorporate an ADA accessible route to these spaces?

NSF Respsonse: No. There is no ADA requirement above the main deck. However, enhancements to internal communications should be considered to allow a virtual connection between all public spaces on the vessel.

Question #18: With regard to increasing the length of the vessel, is it necessary to maintain the vessel domestic tonnage under 300 GT within GA drawings presented during the proposal stage?

NSF Response: No. The proposal requirement is to incorporate the NSF determinations to the maximum extent possible to illustrate the proposing institution's understanding of project requirements. The institution should articulate in their proposal how they will fully incorporate all remaining details (such as the 300 registered gross tonnage limit) as part of Phase I.

Question #19: NSF Proposal Preparation Guidelines state: "Margins, in all directions, must be at least an inch." However, there is no mention of whether headers and footers can be included in the margin space. Is the use of headers/footers within the margin allowed?

NSF Response: The 1" minimum margin requirement for text should be followed. Although FastLane may give a warning, NSF would not reject a proposal if headers or footers were included within the margin for this particular solicitation.

Question #20: Is there any option for submitting documents in a larger than 8.5 x 11" page format?

NSF Response: Yes; Large format pages are best accommodated in the "Special Information and Supplementary Documents" section of FastLane when uploaded as a single PDF. Any supplementary documents should be referenced in the Project Description to facilitate review. NSF would encourage the use of large format documents where appropriate to improve clarity during review. Please note that the Ship Acquisition and Upgrade Program is exempt from the 15−page Project Description limit. The Project Description limit is 45 pages per the IPS Proposal Submission Guidelines referenced in the solicitation. The total page limit is 250 as described in the solicitation. See "V. Proposal Preparation and Submission Instructions". There is no specific format required for the RCRV proposal. It is at the proposing institution's discretion on how to divide information appropriately between the FastLane sections and stay within the allowable page limits.