Part A – Resource Plan

I. Background and Information:

1. Explain the business need for the proposed action. Indicate potential cost savings to industry where possible.

Several field issues with precipitation hardened nickel alloys appear to demonstrate a need for enhanced testing techniques and/or acceptance criteria.

Industry JIP and individual company research has been conducted to evaluate performance of precipitation hardened nickel alloys in hydrogen charging environments, but a uniform industry position has not been reached on processing requirements, raw material manufacturer qualification requirements, or production testing requirements that can be specified to further enhance hydrogen embrittlement resistance.

First, the Task Group should develop a ballot for a revision of Section 1.1 that more accurately addresses the benefits and limitations of the current processing requirements, raw material manufacturer qualification requirements, or production testing requirements in API 6ACRA.

Second, the Task Group should review the findings of the current and future JIPs and individual company research related to this issue, and if sufficient information is available, propose new processing requirements and/or new raw material manufacturer qualification requirements and/or new production testing requirements.

2. What is the scope of the standard?

The scope of API 6ACRA reads as follows:
This document provides requirements for age-hardened nickel-base alloys that are intended to supplement the existing requirements of API 6A.

These additional requirements include detailed process control requirements and detailed testing requirements. The purpose of these additional requirements is to ensure that the age-hardened nickel-base alloys used in the manufacture of API 6A pressure-containing and pressure-controlling components are not embrittled by the presence of an excessive level of deleterious phases and meet the minimum metallurgical quality requirements.

3. Is this standard on the work program of another standards development organization (SDO)?
   - Yes
   - No
   - X
   If yes, specify SDO and standard designation/project title/contact

If yes, is the work being coordinated with the appropriate group? Are there special circumstances that would justify independent API initiation of the proposed action?

4. Are a volunteer chair and group of experts available to perform the proposed action?
   Please include names and company affiliation and indicate chair, if available.
   - A Work Group will be established under the API SC6 Task Group for API 6ACRA to develop a draft ballot. The draft ballot will then go to the full API SC6 Task Group for API 6ACRA for approval, the then to API SC6 for letter ballot. Chairman – Tim Haeberle (BHGE), Work Group members – Joel Russo (Technip-FMC), John Goetz (ATI Metals), James Buchannan (ChevronTexaco), Sarwan Mannan (Special Metals), Stan Gregory (Foroni Metals), Thomas Williams (Carpenter Technology), William Howie (Weatherford), Brett Puckett (Shell), and Lee Smith (BP).

5. Is there a need to commit resources to supplement the development of the draft? Would a paid content specialist accelerate progress on the development/revision? Is there a readily available content specialist?
   - No.

6. Are there special format requirements for final document, i.e. knowledge of ISO template required, significant graphics, photos or equations) required that would need extraordinary resources?
   - Yes
   - No
   - X
   If Yes, please provide details:

7. Please provide any other information that is pertinent to the proposed action.

8. What are the implications of not initiating the proposed action? Include potential safety, reliability, environmental and financial impacts that may arise.
   - Field experience indicates additional requirements may be required to enhance the reliability of equipment manufactured from the alloys in API 6ACRA.

9. Is there research proposed to accomplish the proposed action?
   - Yes
   - No
   If yes, complete Part B of this form.
II. Project Timing

<table>
<thead>
<tr>
<th>Proposed start date:</th>
<th>September 2018</th>
<th>Proposed date draft will be ready for letter ballot:</th>
<th>January 2019</th>
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<tbody>
<tr>
<td>TG/WG: (estimated number of volunteers needed)</td>
<td></td>
<td>Content Management: ($ amount &quot;if needed&quot; or volunteer)</td>
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PART B – Research Plan

I. Background and Information

1. Proposed Research Title:

2. Proposed Project Scope:

3. Research Amount:
   $ 

4. What is the business need for the proposed research?

5. Is the proposed research edition-specific for a single standard or will it result in technology enhancement for multiple standards?
   Yes [ ] No [ ]
   If multiple standards, please cite the standards effected:

6. Research Timing:
   [ ] Research is necessary prior to scheduled revision.
   [ ] Research can be done concurrent with revision.

7. How does the research support the proposed action identified in Part A?

8. Is a joint industry project (JIP) a possibility?
   Yes [ ] No [ ]
   If Yes, with who?

9. Are there opportunities for leveraged research with other organizations?
   Yes [ ] No [ ]
   What organizations?
10. What are the implications of not performing the proposed research?

II. **Dates and Funding:**

<table>
<thead>
<tr>
<th>Estimated Completion Date</th>
<th>Prior Research Funding Requested</th>
<th>Anticipated Future Research Funding Needs</th>
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<tbody>
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**PART C – Proposal Feedback/Approval Information**

- **SC comments to Proposer/WG:**
- **Date approved by subcommittee:**
- **CSOEM comments:**
- **Date approved by CSOEM:**
- **Date entered into API Publications DB:**