Attachment 12: Peer Reviewers' Comments with Responses

Reviewer 1:

NIOSH REVIEW "PFD Use in Commercial Fishers"

Reviewer's Name
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Reviewer's Title
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Reviewer's Areas of Expertise:
1) Ergonomics and Occupational Biomechanics
2) Safety
3) Rehabilitation Ergonomics

PFD Use in Commercial Fishers

B. CRITIQUE

1. **Significance:**
Does this study address an important problem in occupational safety? If the aims of the project are achieved, how will scientific knowledge be advanced? What will be the effect or impact of this study on the DSR mission to reduce worker injuries?

The study is intended to address two important problems: (1) Perceptions, attitudes and beliefs of commercial fishers relating to PFD use, and (2) on-deck comfort and function of five different PFD models. If the aims of the project are achieved, this knowledge will provide the commercial (and sport) fishing industry and individual workers, and PFD manufacturers with valuable information relating to design of PFDs and how to increase their use.

2. **Approach:**
Are the scientific framework, design (including the composition of the study population), methods, and analyses adequately developed, well integrated, and appropriate to the aims of the project? Does the project officer acknowledge potential problem areas including feasibility, and consider alternative tactics?

The study is well developed in many areas, I am particularly impressed with:

a. Use of commercial fishers and relatively large sample sizes. 400 fishers will be recruited to complete surveys (goal of final n = 370 or 372) and 200 fishers will be recruited to evaluate PFDs on board (goal of final n=142).

b. Relatively long (one month) evaluation period for PFDs.

c. Evaluation in both summer and winter fishing conditions.

Comments/concerns:

a. PFD evaluators will be asked to rate the PFDs after one week and one month of use. It might also be appropriate to ask them to evaluate the PFDs upon first presentation to get an idea of how the "average" fisher would react to the device at first impression.

The fishermen's first impressions of the PFD will be important data for the study, since we are testing a hypothesis that fishermen's ratings of comfort will become more positive over time as they adapt and grow accustomed to the PFD. This was the goal of the one week rating; but we agree that it may be better to have the first evaluation form completed after just one or two days of wear. We have changed the methods to reflect this.

b. Based on the fact that PFDs will be evaluated for one month, there is a four-month evaluation period for both summer and winter use, and there are five types of PFDs, it appears that summer fisher and winter fisher will evaluate only one PFD type. This means that within-subject comparisons will not be possible.

Each fisherman will evaluate a single PFD (each PFD will be tested by about 40 fishermen.) Although we will be making comparisons between the five types of PFDs tested, it is true that the design does not allow within-subject comparisons. Within-subject comparisons would

undoubtedly be very useful if appropriately designed. However, this feature would imply a major increase in the logistical complexity of the project, which is already somewhat challenging, given the setting and the population in question. In addition, we would have to consider the possibility of an order effect, as well as confounding between habituation and PFD type. These issues would cast some doubt on the findings, unless well controlled, which seems problematic in view of the planned sample size.

c. Since I was not provided with the survey instruments themselves, I do not know the specific questions that will be asked during phase one or two. A question relating to how the subjects compare their "assigned" PFD to those they have used in the past might be informative.

In principle, this would be a good idea, but putting it into practice seems problematic. Many participants will not have used a PFD, or may have used one years before, leading to sparse and perhaps unreliable data about their experiences. Those who have used one may have used any of several models, and some participants may have used more than one at various times. We would have to ascertain what these were, information that may not be obtainable or accurate. Thus, we would have to ask several questions in order for the data to be interpretable, and the resulting data are likely to be sparse and of questionable accuracy. We feel that the core purposes of the study may be better served by focusing the instrument (meant to be short and simple) on fishermen's current experience with the PFDs they are testing.

d. Commercial fishing boat captains are very "possessive" (I can't think of the right word – provincial, dictatorial, ???) of what happens on-board. There is no indication that the boat captains will be consulted or informed when PFDs are given to their fishers during phase 2. Perhaps this should be considered.

This information has been added into the protocol. The skippers will all be informed of the study, and asked to participate in the evaluations, like the crew members. We will, as required, use an informed consent form as a prerequisite for participation. In fact, we could not compel a skipper to allow the study on his vessel, although by the same token he could not compel his crew to participate. We will clarify all this if questions are asked.

e. Will spares be given to the subjects?

The research assistants located in the fishing ports will have extra PFDs available. This information has been added to the protocol.

f. HSRB approval is assumed but there is no mention of the subjects signing an Informed Consent document.

Section 10 of the Supporting Statement and Attachment 8 (Additional Information for HSRB Review) describes the Informed Consent procedures. The Informed Consent document will be attached to the final copy of the protocol as it goes forward for OMB and HSRB review.

g. On Table II the "Total respondent Costs" do not seem to reflect the "Total Burden Hours" times the "Hourly Wage Rate". 123 x $13.71 = $1687 (not $1823) and 48 x $13.71 = $659, not $919. Perhaps there is an overhead or some other factor I am missing.

Table II contained errors that were overlooked when it was sent out to the reviewers. It has been corrected.

3. **Innovation:**
Where needed, does the project employ novel concepts, approaches or methods? Are the aims original and innovative? Does the project challenge existing paradigms or develop new methodologies or technologies?

The project does not involve experimental innovation, but the resulting data will fill an existing knowledge gap and contribute to the reduction of fisher fatalities.

4. **Project Officer (Investigator):**
Is the project officer appropriately trained and well suited to carry out this work? Is the work proposed appropriate to the experience level of the project officer and other researchers (if any)? Please do not include descriptive biographical information unless important to the evaluation of merit. For new or less experienced NIOSH staff, note if the level of supervision appears adequate.

The research team is highly capable of completing this research, probably more than any other group in the U.S.

5. **Environment:**
Does the scientific environment in which the work will be done contribute to the probability of success? Do the proposed experiments take advantage of unique features of the scientific environment or employ useful collaborative arrangements? Please do not include a description of available facilities or equipment unless important to the evaluation of merit.

The collaboration between commercial fishers and NIOSH provides a unique scientific environment essential to the success of the project.

6. **Overall Evaluation:**
In **one paragraph**, briefly summarize the most important points of the Critique, addressing the strengths and weaknesses of the application in terms of the five review criteria. Recommend a score reflecting the overall impact of the project on the field of occupational safety and health, weighting the review criteria as you feel appropriate for each application. An application does not need to be strong in all categories to be judged likely to have a major impact and, thus, deserve a high merit rating. For example, an investigator may propose to carry out important work that by its nature is not innovative, but is essential to move a field forward.

The strength of this project is the collaboration between NIOSH and commercial fishers in a long-term project. This is a major issue and will provide the fishing industry and NIOSH (and possibly regulatory agencies) with data that can be used to develop and enforce programs that will save lives. My notations in section 2 above are comments and constructive suggestions only. This is a rare opportunity to collaborate with this industry in a well-structured, long-term study and I hope the study is approved and funded.

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C. OTHER CONSIDERATIONS

7. **Gender, Minority, and Children Inclusion (As Relevant)**

Apparently, both genders will be included

8. **Human Subjects** Note that NIOSH projects involving human subjects must obtain review and approval from the NIOSH Human Subjects Review Board.

NIOSH HSRB approval has been requested.

9. **Researcher Hazards**

No apparent researcher hazards. I assume they will be familiar with hazards associated with walking on slippery docks,, etc.

10. **Budget** Please note if the budget appears adequate to do the work.

N/A

11. **Other**

N/A

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D. NUMERICAL SCORE

NUMERICAL SCORE

Please provide a numerical score from 1.0 (best) to 5.0 (worst) rating the entire project. Use a single, two-digit number, e.g. 1.2 or 3.4.

RATING	EXPLANATION	SCORE
Perfect	**No Weaknesses**	**1.0**
Average	**Strengths = Weaknesses**	**2.5**
Imperfect	**No Strengths**	**5.0**

PROJECT SCORE: 1.7

Reviewer 2:

October 10, 2007

To: Devin Lucas, CDC/NIOSH

From: Paula Cullenberg, Associate Director, Alaska Sea Grant

Re: Comments on proposal to review use of PFD s by Alaska commercial fishermen

In my role as Associate Director of Alaska Sea Grant, I lead Alaska's statewide marine extension program. University of Alaska marine extension faculty members are located in 10 coastal communities across Alaska. At least half of us are actively engaged with commercial fishermen and many either do safety training or coordinate training by other entities visiting his/her community. More information about our program is found at www.marineadvisory.org . In addition, I personally have participated in commercial fishing in Bristol Bay for 20 years.

This is an excellent proposal – practical, thorough and needed. It will be carried out by individuals and an organization that is well known in the state for doing responsible and worthwhile research. Drowning in Alaska is a serious reality for all boaters all year regardless of boat size, location, or activity. While the message that PFDs can save lives is frequently heard, fishermen often find that PFDs are unwieldy to work in, and/or they are willing to take the risk that they won't need one. If this project can identify

gaps or approaches in training that will encourage PFD use, or if it will help manufacturers develop a PFD that is more compatible with commercial fishing situations, then this is an excellent use of public funds.

I am pleased to see that the study recognizes that various fisheries are different enough to analyze them separately. I would suggest that the proposers take into account that they will be dealing with a multicultural audience in Southwest Alaska. It would be useful to research how communication might be affected as a result – i.e. will fishermen from different cultural backgrounds agree or disagree more often to be surveyed or participate in the testing of PFDs? I also wondered if any sort of incentive would be used to encourage participation. The University of Alaska recently offered $100 to its staff and faculty who completed a comprehensive health survey. Last year, I received a survey with a $5 bill attached. It was enough incentive (or "guilt") to make me take the time to participate. Perhaps fishermen could be allowed to keep the PFD of their choice for the participation.

I have reviewed in particular the "benefits and risks to respondents". My only comment is that risk would be increased if a fisherman removed a commonly used PFD to test a new one and if he/she was less familiar with it in a risky situation. On the other hand, if a fisherman is not commonly using a PFD, just the mere participation in the project may convince that person to continue to wear a PFD. In that case, the study actually reduces risk.

This is an important study and I look forward to the results. Please let me know if I can offer any other comments.

Ms Cullenberg:

Thank you for your review of this protocol. We have given much thought to your comments about the cultural differences that we will certainly encounter in Southwest Alaska. If one cultural group is less likely to be willing to participate, it may affect our ability to generalize the results to the fishing population there. In addition, fishermen's cultural background may have a bearing on their attitudes and perceptions about risk and PFD use. We will ask one question about race/ethnic identification on the initial (phase one) survey, but we will limit it to whether the participant is an Alaska Native or not. In this specific occupational group, the salient distinction for ensuring the usefulness of the study is between Natives and non-Natives. Asking this one question may help us tailor and target any informational messages stemming from the results, and it will give us an idea of how representative our sample is in that regard.

With regard to incentives, the participants in the PFD evaluation (phase two) will be allowed to keep the PFD they tested. On the other hand, if a participant dislikes the PFD that he tested, being allowed to keep it is not an incentive; so we will also offer the option of keeping some other PFD model. This is explained in Section 9 of the Supporting Statement.

We agree with your comments about the risks and benefits to respondents. As you indicated, most fishermen do not wear a PFD, and for them, participating in the study will lower their risk of drowning in a fall overboard or vessel abandonment. It is possible to imagine a scenario in

which substituting a new for a familiar PFD might increase the risk. This might occur if an unfamiliar manually operated inflatable PFD were substituted for an automatic inflatable or a foam-core PFD, and the wearer failed to deploy it. Still, we agree that this rather unlikely risk carries less weight than the clear benefit of providing PFDs to fishermen who would not otherwise wear one.