RFC Verification Workshop Questions
August 14-16, 2007
CBRFC
Salt Lake City, UT

Day 1: Verification Concepts and Methodologies

1. There are so many types of statistics the IVP ob8.2 will be able to generate but I don't understand what all those different stats are, what they mean and how to even start interpreting them, so I'm hoping that the workshop will be able to answer that for me. ***[Day 1: Effective Strategies to Communicate Verification]***

2. Can we come up with a glossary of "common language" descriptions of the various verification statistics used in the verification program, to help explain errors and trends to the forecasters that are not familiar with statistics? ***Material: Glossary***

3. Right now, most of our deterministic verification efforts that I am aware of tend to treat each individual forecast time series ordinate as a separate forecast to be verified. Is there any tools to help assess the quality of the whole forecast time series - shape, timing, peak? ***STAT-Q tool***

4. I would like more info on which types of stats (RMSE, MAE, ME) would best apply for different things you're trying to show.

5. What is the value of calculating stats using 'persistence'? (I always use persistence=off)

6. Our RFC generates a variety of hydrologic products ranging from river forecasts in text and graphical format, water supply forecasts and ensemble guidance. What metrics are the most appropriate to assess the various types of forecasts and provide the information that our customers can understand? ***[Day 1: Effective Strategies to Communicate Verification; Day 3: EVS - Effective Strategies to Communicate Verification]***

7. Please review the concept of "lead time" and how does this apply when generating statistics. I see this used on Southern Region's verification web site as well as in the IVP application. ***[Day 2: IVP software capabilities; Day 3: EVS software capabilities]***

8. The main question I have at this point is about how gages downstream of reservoirs should be handled, especially in cases where we never receive any proposals. This can produce a slight 20-foot rise we weren't expecting, with correspondingly unfortunate MAEs. Also, we have some sites listed as slow responders by how rain on the basin performs, but their release-related rises are definitely not slow, so this doesn't look too good either. Frank Richards and I exchanged a few messages about this -- he's in favor of dropping sites like this altogether because the releases overwhelm any determination of forecast skill. I'd be interested to learn how other RFCs handle this situation. ***[Day 1: Effective Strategies to Communicate Verification; Day 2: NWS Verification and NPVU Verification Pages]***

9. How do we determine what is a 'good' forecast? (e.g., peak, shape, timing, thresholds) What is the best way to present this to the users? ***[Day 1: Effective Strategies to Communicate Verification]***

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2. How do we best manage and/or organize verification of hundreds of forecast points in 34 forecast groups, and then display the results in a meaningful way? ***[Day 3: Verification Teams***]

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Day 1: Findings and Recommendations of the Hydrologic Verification System Requirements Team

1. What is the status of the NWS River Forecast Verification Plan and what can we expect the verification program to be like in the future? ***[Day 3: Verification Teams]***

2. Does the NWS have plans to offer a national website for the public to use, other NWS offices to link to, that will allow access to verification stats of any type for any point where forecasts have been issued?

3. Are tools being developed, and if so when might we see them, to assist in performing hindcasts with different scenarios - no QPF, perfect QPF, MAPX, MAP, etc? I know the

national verification team proposed this form of verification, but I want to know where we stand on making progress on this.

4. I'm curious about whether the categorical methodology will be incorporated into the national program anytime soon, or ever. If so, it might be very helpful if the "misses" category were divided into low and high misses. ***[Day 2: NWS Verification and NPVU Verification Pages]***

5. What river forecast verification metrics does the upper level NWS Management find useful in their decision making? How are they used? ***[Day 2: NWS Verification and NPVU Verification Pages]***

Day 2: NWS Verification and NPVU Verification Pages

1. What is being done with the numbers from the RFCs after they have been compiled? Where are they? Can we access them?

2. How does the NWS intend to separate stats of verification between RFC forecasts and WFO forecasts?

3. Will any national GPRA goals be set for NWS hydrologic stats in the near future?

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Day 2: Archiving Requirements – Current requirements

1. What data do we need to be archiving today to meet the verification plans for the future? ***[Day 3: EVS archiving requirements]***

2. We send river forecast statistics to OCWWS that utilizes the archive database and construct

verification graphs and tables using various other databases and spreadsheets existing at our RFC. What would be the best means to archive the data?
Should there be one database dedicated to the storage and retrieval of verification data?
[Day 3: EVS archiving requirements]

Day 2: IVP Software Capabilities

1. I would like to see something on how to use the current version (ob7.2/ob8.1) of deterministic verification because that is what I'm using now. I've got a pretty good handle of using IVP in batch mode, but I haven't used it in the GUI mode at all.

2. Will I have a thorough understanding of the new IVP?

3. Is there a way to define an event for verification purposes? Say my value for a 72 hour ordinate is a base flow continuation forecast. Thirty hours later the rain starts and by the time that 72 hour ordinate is valid, the river is has risen 15 feet. Now there is a 15' error from a valid forecast. It just seems flawed.

4. Would like to know how to do stats for individual fgroups/sites over a different periods of time - what is best way to set up input files, batch files, organize output, and make graphs that are available to many users. ***[Day 3: EVS software capabilities]***

5. Is there a way to set up a batch so you only have to enter Fgroup name or station ID to get verification numbers for a month or year...and not have to create a whole pile of files for every possible case?

6. I would like to see more examples of different cases, learn more about how to use verification to improve forecasts short/term long term. ***[IVP lab; Day 3: EVS software capabilities – lab]***

7. I would like to create stats on forecast issued (in RVF) vs. model simulations.

8. Please review the concept of "lead time" and how does this apply when generating statistics. I see this used on Southern Region's verification web site as well as in the IVP application. ***[Day 1: Verification Concepts and Methodologies***; ***Day 3: EVS software capabilities]***

9. Are there plans to have the WFOs running the IVP software?

10. I guess my question is more of a technical question related to IVP. I've found when forecast vs. observations are plotted, there is no way to differentiate between forecast points. In the old program, it would list each forecast point separately in the legend and give it a unique color on the plot. In the new IVP, it plots all the forecast points under one color and from what I have found, there is no way to give each forecast point a unique color and name in the legend. I have been able to highlight one point at a time, but I have not been able to give each point a unique color on the graph. Another issue I've encountered, on the old version of IVP, when you generated the error statistics, the forecast points would plot in the ordered listed on the input card. Now it plots alphabetically with no way to change it from what I can see. I would like to

have the option to plot my errors upstream to downstream to see if my forecasts are getting better as I go downstream.

11. What new/enhanced tools are available to verify river forecasts?

12. Do we have tools to effectively disaggregate river forecasts and verify the inputs, models, and forecaster intervention separately?

13. Can IVP help us improve our forecasts? Can we determine source of error in stage forecasts (i.e. QPF error vs. observed inputs vs. model error)?

Day 3: EVS Software Capabilities

1. I know very little about EVS verification.... I missed most of the conference calls last year, so I'm hoping to just get a beginners understanding of it. Currently I do run ESP for several locations but I know just enough to do the points and clicks and a few basics on to get a feel if the numbers it generates are reasonable ... but I still feel very uncomfortable doing it and often ask one of the more knowledgeable guys for their opinion.

2. How will probabilistic verification be performed?

3. How do I use ensemble verification and is it ready for prime time?

4. How do we verify short term ensembles using contingency shef codes?

5. How can we verify the long term probabilities (i.e. 90 day products)?

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[Day 1: Effective Strategies to Communicate Verification]

3. It looks as though quite a bit of workshop time will be spent on verification systems the field doesn't have yet. The longer the lead time between training and deployment, the less people will tend to remember; I hope significant follow-up activities are planned for deployment time (is that what the conference calls are for?)

4. What are the training plans for hydro verification?

5. What are the most important parts of this workshop that I should highlight in a 1-hour webcast on the topic?