**RATINGS TEAM**

**Functional Requirements for Processing Ratings**

**DRAFT #3 – April 21, 2005**

The USGS makes their ratings available to RFCs on the USGS website. Each day, the USGS runs a program at each District office to transfer the current rating with appropriate shifts to this website.

RFCs need a standard methodology to obtain these ratings, update the NWSRFS database if appropriate, and then make these available to the appropriate WFO. Some procedures are already in place to perform these tasks. These procedures will provide a valuable starting point to develop a single set of standardized procedures. With a single set of agreed-to procedures, this functionality can then be implemented into baseline AWIPS software and the maintenance and support of these procedures can be taken over by OCWWS.

Following are the capabilities that the system to access the USGS ratings and then provide them for use in NWS offices:

1) Archival of USGS Ratings – All new ratings from the USGS should be archived at the RFC.
2) Archival of NWSRFS Ratings – All ratings used in NWSRFS should be archived at the RFC.
3) Status of ratings – A user should be able to see the date that all ratings in their system were updated by the USGS and in NWSRFS. The user should be able to specify a specific rating for comparison.
4) Implement Ratings in NWSRFS Manually – A user should be able to graphically compare the current NWSRFS and USGS rating curves. This GUI should allow the user to update the rating in NWSRFS by (1) "dragging and dropping" locations in the NWSRFS rating curve based on the current USGS rating or (2) replacing the current NWSRFS rating curve with the USGS rating curve.
5) Discharge Measurement Display – On the GUI, a user should be able to display the discharge measurements along with the USGS and NWSRFS rating curves.
6) Precision of the Rating curve – The USGS rating curve is specified every 0.01 foot. The user should be able specify the interval of the rating curve points from the USGS – i.e. 0.01, 0.1, 0.2, 1.0, etc.
7) Log file – All changes in ratings in NWSRFS should be logged and a utility is needed to be able to review that log file.
8) Implement Ratings in NWSRFS Automatically – An RFC should be able to take the ratings from the USGS and place them directly into NWSRFS with no manual intervention. (An office could choose between Item 4 and Item 8 for processing their ratings.)

9) Ratings in the RFC IHFS database – When a rating is changed in NWSRFS, that rating should also be updated in the RFC IHFS database. This transfer should be automatic.
10) Ratings in the WFO IHFS database – When a rating is updated at the RFC, that update should be sent automatically to the WFO database. The WFO should be able to choose between automatically loading the rating into IHFS (hands-off) or manually review the changes before they are made.
11) Notification of Rating Changes – When a rating is changed in the WFO IHFS database, the appropriate Service Hydrologist/Hydro Focal Point should be notified by email of the change. This notification should be optional and at the discretion of the WFO.
12) Point-n-click menu system – All of these capabilities at the RFC and WFO that are run on demand should be available thru a menu system.
13) Modularity – Procedures should be modular enough that if we gain access to the COE ratings, we can easily integrate them into these procedures.
14) Archive all flow measurements for sites we are interested in. Each day, we should access the USGS website and pull back all new discharge measurements and archive them. If new measurements were received, an alert message should be displayed on AWIPS listing the sites and the discharge measurements. Since the USGS also has a field in that measurement file that indicates if it differs from the current rating, that should also be in this alert message. The RFC should be able to set a filter on the alert feature either by a percentage difference form the rating, an absolute amount from the reading form the rating, or measurements made above a certain stage level. A menu system should be available to allow a forecaster to look at all the archived flow measurements.
15) Procedures should be established such that WFOs may elect to update ratings at a different time interval compared to the RFCs. For example, RFCs may send ratings to the WFOs daily and the WFOs may only update their databases weekly or manually.
16) These procedures must be compatible with accepted methods of accessing data from external sources and requires that there always be a way for the RFC AWIPS to access the USGS ratings depot, whether through http, ftp, rsync, or other accepted protocol.