Subject: Accessing Customer Statement Files through the Decision Support System (DSS)

Statement: NYISO Customers may access customer statement files in comma separated value (CSV) format directly through the DSS Automated Data Delivery (ADD) tool.

Details:

Background

Settlement advisory files are available through the Automated Data Delivery (ADD), a subsystem of the Decision Support System (DSS). The ADD system allows customers to dynamically access customer settlement data - specifically daily and hourly customer statement files - directly from the DSS.

Additionally, Market Participants may create Transaction Import Files for the Federal Energy Regulatory Commission Electric Quarterly Report (FERC EQR) through ADD. This functionality is described in Technical Bulletin 139, "The NYISO Decision Support System (DSS) and the FERC Electric Quarterly Report (EQR)."

Files retrieved through ADD are limited to Billing Days/Billing Versions that have been stored in the DSS since February 1, 2005. Once bills are "re-spun" for non-invoiced days and versions, these non-invoiced versions of data are over-written with the latest non-invoiced version. These non-invoiced versions are referred to as Version 0 (V0) in the DSS. Invoiced versions are maintained by the DSS and are never overwritten. The DSS stores the Flexible Invoice Period (FIP) settlement as Version 0.5 (V0.5), the Initial Settlement as Version 1 (V1), the 4 Month Settlement as Version 2 (V2) and the Final Bill Close-out as Version 3 (V3). Since the DSS only retains the latest non-invoiced version of the data (V0) at any time, previous non-invoiced versions of files for "re-spun" days will not be available from the NYISO. If Market Participants wish to maintain all versions of all days, they must retrieve them from the DSS on a daily basis, and store these files locally. Since the DSS is only loaded once per day, requesting the same day and version of data within the same day is redundant.

This Technical Bulletin assumes that users have a valid digital certificate, a DSS account, and are currently logged into the DSS web environment.

The remainder of this Technical Bulletin addresses the following topics for accessing statements through the DSS ADD:

- Accessing ADD
- Entering New Requests in ADD
- Retrieving Files
- Viewing, Modifying, or Deleting Requests for Files
- System Automation for File Retrieval from ADD

Accessing ADD

Users may access the ADD system directly from the Home screen of the DSS. All applicable links to ADD functions appear in a box on the left-hand side of the screen as displayed in Figure 1:

Figure 1: NYISO DSS Home screen
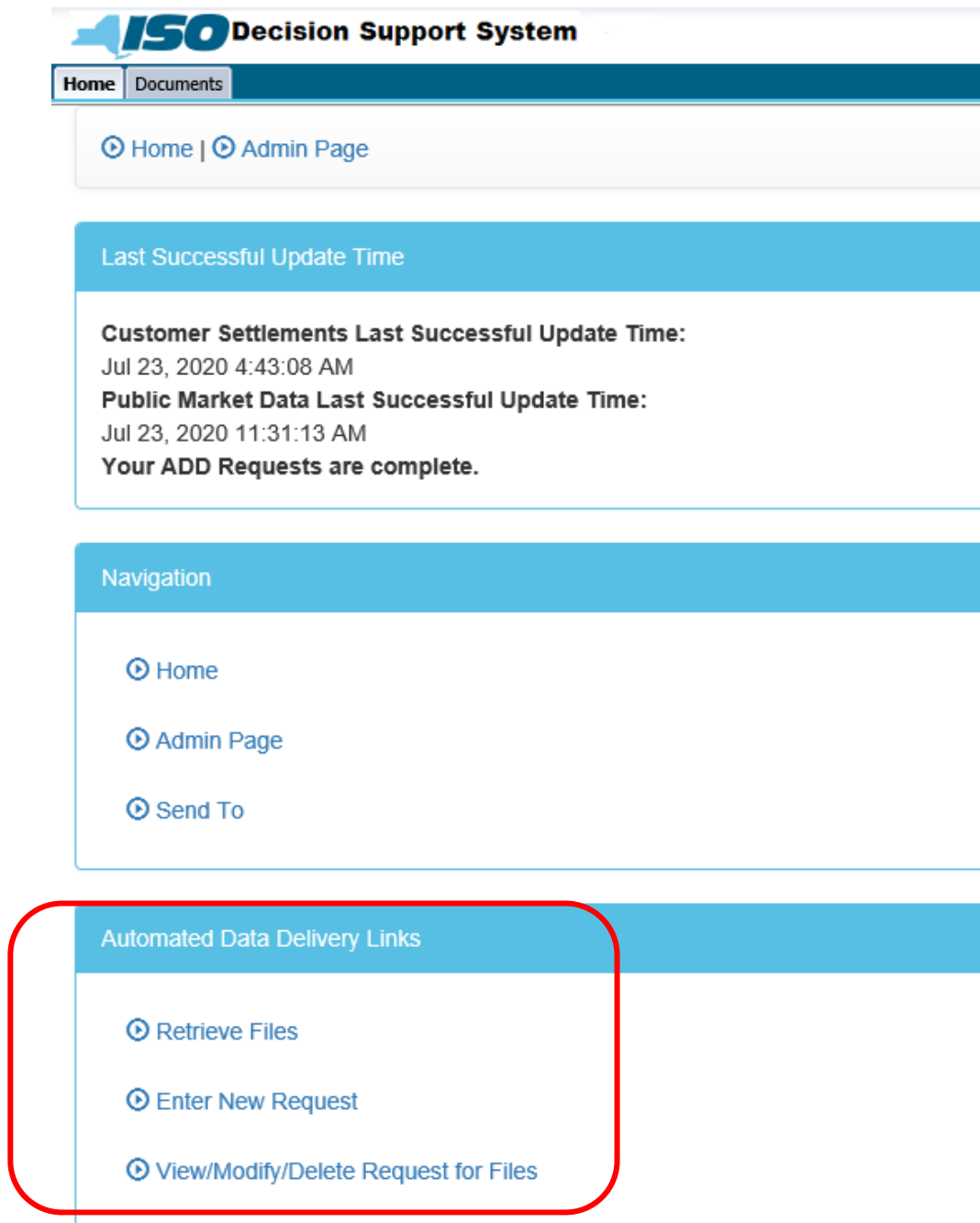
The ADD system offers three primary functions: (i) the ability to retrieve customer statement files; (ii) the ability to enter new requests for files; and (iii) the ability to view, modify, or delete existing requests for files.

Entering New Requests in ADD

Users may enter new requests by selecting the "Enter New Request" option in the ADD Links box. The following screen (Figure 2), within the DSS page, will appear:

Figure 2: NYISO DSS ADD Enter New Request screen

The five format types available are: Daily Customer Statement, Hourly Customer Statement, FERC EQR Transaction File, FERC EQR Trans File – Bilat Energy Contracts, and Invoice Version Manager. These files present data on an hourly, daily, or monthly level.[1]

In order to enter a request, users may select one of the format types.
For instance, if the Daily Customer Statement were to be selected, the following screen (Figure 3) would appear:

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[1] Market Participants should note that the functionality associated with FERC EQR reports is described in Technical Bulletin 139.

Figure 3: NYISO DSS ADD Enter Request Parameters screen

Utilizing this screen, users may select specific request parameters based on the format type (Daily or Hourly). The top of this screen (Figure 3) displays the identical metadata (format descriptions) offered in the "Select Type for New Request Screen" (Figure 2). Users may next select their company or organization from the menu drop-down box in the parameter labeled "Organization." Market Participants should note that the list of available organizations is dependent upon user log-in; users will only see those organizations for which they have been authorized Customer Settlements access by the organization's DSS administrator. Users should title requests using the optional "Request Description" parameter as this will help to identify requests when requests are viewed or modified later.

The next parameter "Schedule Frequency" is split into two categories. The "Recurring" option creates requests which are executed each morning immediately following the daily load of data. The "One Time

Request" option initiates requests that occur on a one-time basis – at the time the request is submitted. Within each option, three radio buttons allow for further levels of granularity for requests.

Selecting any of the three radio buttons under "Recurring" will result in one or more reports being sent to a user's ADD account on a *daily* recurring basis.

Under the "Recurring" option, the first radio button "All Billing Days loaded to DSS today" creates a file for each billing day that has been loaded into the DSS on the date the request is run. Assuming that billing data for 4/1/15, 4/2/15, and 8/1/15 is loaded into the DSS on Monday, 8/3/15, and this filter is executed on 8/3/15, it would retrieve data for 4/1/15, 4/2/15, and 8/1/15.

The second radio button limits requests to the most current advisory files available in the DSS. These advisory files contain data for settlement versions two days prior to the day of the request. For example, a request executed on the 10th of the month would produce a file containing data for the 8th of the month.

The last radio button limits requests to settlement versions, from the current month, that have been loaded into the DSS on the date the request is run. In this case, the user would receive all days loaded to the DSS on the day the request is run for the current calendar month *and* the prior not yet invoiced month. For example, if the request was run on May 7th, then the user would receive files for May 1st-5th, and files for any April days that were added to the DSS on May 7th.

Selecting any of the three options under the "One Time Request" parameter will result in one or more files that will be created at the time of the request. The first option results in a file for one specific billing day and version number. The billing day version is selected through the adjacent drop-down menus.

The second radio button "All Billing Days Loaded to DSS Between:" results in a one-time request producing files for each billing day and settlement version loaded into the DSS between specific dates. Users may indicate these dates by clicking within the parameter fields and selecting a date from the calendar that pop ups. These requests are limited to a seven-day date range.

The last radio button allows users to specify a range of billing days for a single version number, limited to a 31-day date range. Users may indicate these dates by clicking within the parameter fields and selecting a date from the calendar that pop ups. The version is selected through the adjacent drop-down menu.

After defining these parameters, users may select "Submit Request" at the bottom of the screen (Figure 3). The following message will appear on the screen: "Your attempt to create a new ADD Request was successful."

Retrieving Files

Subsequent to entering a new request, users may access the resulting files through the "Retrieve Files" link of the ADD link box. (Figure 4)

Figure 4: NYISO DSS Home screen – ADD links
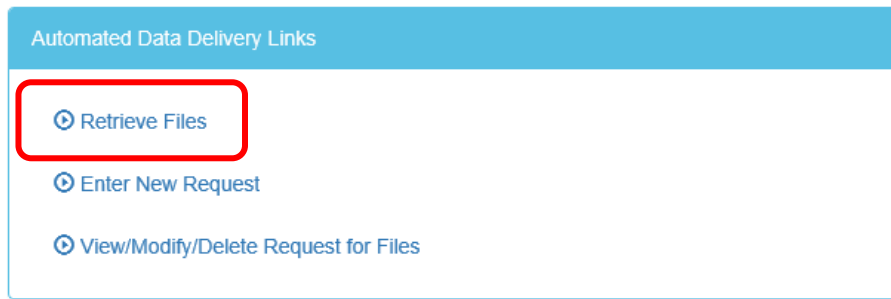
After requests have been successfully processed by ADD the following screen will appear (Figure 5):

Figure 5: NYISO DSS Home ADD Retrieve Files screen
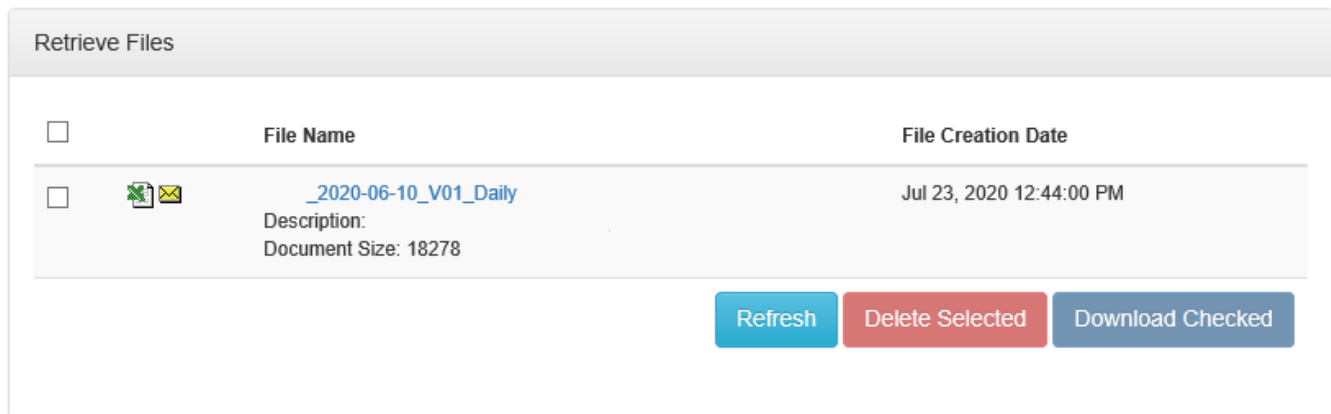
This screen provides the list of all files available to a specific user. The naming convention used to denote files is as follows: (Org ID)_(Date: Year-Month-Day)_(Billing Version Number)_(Format Type: Daily or Hourly). By clicking on the file name, users have the option of either saving the file locally or opening it within the browser. When users select a file by clicking on the title, a pop-up box will ask if the user wants to open or save the file. Users may delete files by selecting the check boxes adjacent to the file name and then selecting the "Delete Selected" button at the bottom of the page. To delete all the files that appear on the "Retrieve Files" screen (Figure 5), users may choose the check box at the top of the page under "Retrieve Files", which will select all files, and then press "Delete Selected" button.

Users may download any of the files appearing on the "Retrieve Files" screen (Figure 5) to their local drive in zip format. To download files, users may either select individual files by clicking the check box next to the file name or select all the files on the screen by clicking the check box at the top of the page under "Retrieve Files", which will select all files. After specifying the files users should click the "Download File(s)" button at the bottom of the screen. The user will be prompted to save the file(s) and specify the file location.

While in the "Retrieve Files" screen, users will also see the following button, "Refresh," directly below the list of files (Figure 5). Clicking on this button will refresh the list of files to incorporate new files. Users should note that after a file is opened, it remains within the user's ADD retrieved files list only through the end of that day. The envelope icon adjacent to the file name denotes an unopened request. Any unopened files will remain viewable in the ADD retrieved files list for 21 days.

Users may confirm the status of a "Retrieve Files" request through the "Session Status" box on the left-side of the DSS Home screen. As the system is processing requests, the ADD File Status will display the following message, "Your ADD requests are currently being processed." After files are retrieved, the message will read, "Your ADD requests are complete." (Figure 6)

Figure 6: NYISO DSS Home screen
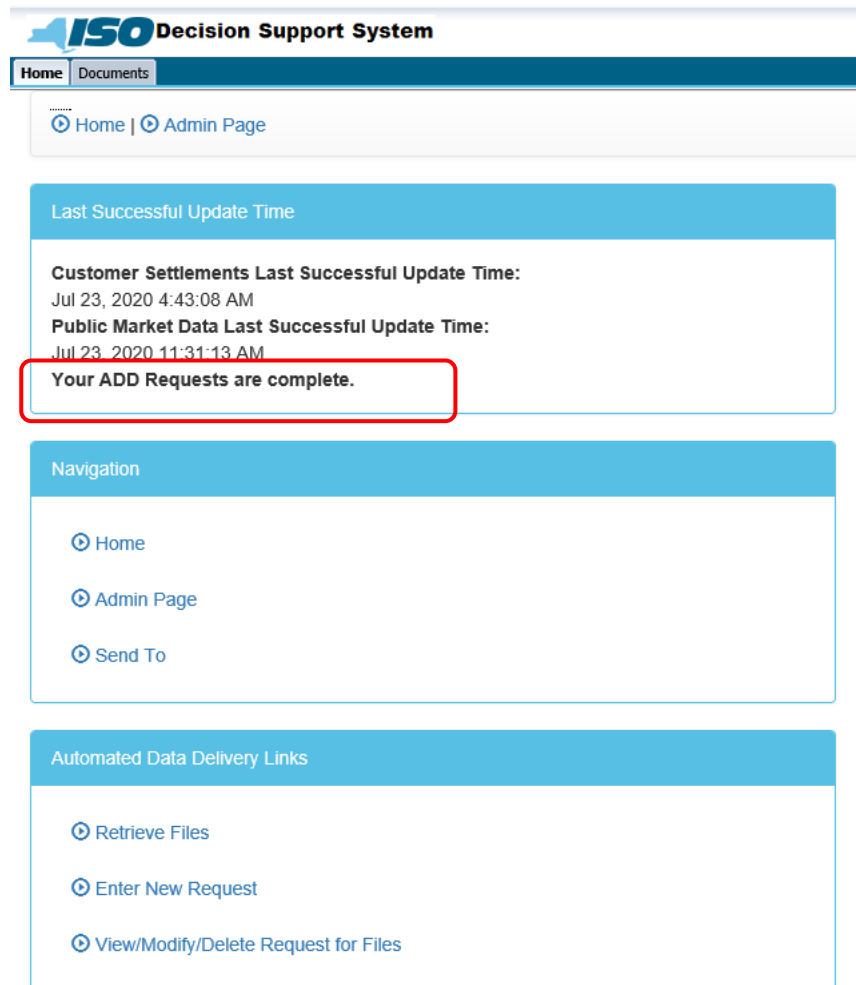
Viewing, Modifying, or Deleting Requests for Files

Users may view parameters, modify parameters, or delete requests for files. These options apply towards requests for files rather than the files themselves. Files may be deleted directly from the Retrieve Files screen. This ability to view, modify, or delete requests is available through the "View/Modify/Delete Request for Files" option of the ADD link box. Selecting this option produces the following screen: (Figure 7)

Figure 7: NYISO DSS Home ADD View, Modify, Delete Request screen

If the "Edit" function is selected in Figure 7, the "Modify Request Parameters for Format Type" screen (Figure 3) appears.

Users may cancel any future executions of a request by first selecting the check box adjacent to the format type and then selecting the "Delete Request" button at the bottom of the page. By utilizing the "Select All" option at the top of the screen in figure 7 and then choosing the "Delete Request" button, users may delete all requests.

Users may re-run requests by selecting the check box adjacent to the format type and clicking the "Run Request" button.

System Automation for File Retrieval from ADD

Market Participants may also access the DSS ADD through automated/third party systems rather than the browser interface described above. The following describes two options for automated processes.

Since access to the DSS application requires authentication via the use of digital certificates, an application program will need to handle the exchange of web server and client certificates that occurs as part of the handshake before an SSL connection is established during automated processes. Use of a particular certificate store or client certificate will also require special processing. These conditions apply to each of the options described below.

Option A – Comma Delimited List of ADD Files

This option may be utilized by selecting the following url:

https://dss.nyiso.com/dss/login.jsp?user=****&pass=****&automated=2

This URL redirects the automated process to the "Retrieve Files" page (Figure 5). Market Participants should use their actual DSS userid and password in the place of user=****&pass=****)

The above URL will return a comma delimited list of Document Ids, Document Names, and the date that the files were generated in ADD.

To retrieve the individual file content for each file, the automated process used to access the comma delimited list must retrieve the Document Names and Document IDs from that list, and substitute them into the following URL:

https://dss.nyiso.com/dss/docViewAGN.jsp?RepoType=I&ID=XXXX&DocName=XXXXXXXX&entry=&DocType=csv

The comma delimited list will be in the following format. Document IDs and Document names are highlighted in red.

12345, 9876_2004-06-05_V00_Daily,06/08/2015 14:23
23456, 8765_2004-06-05_V00_Hourly,06/04/2015 14:23

Optionally, users may retrieve and then delete files through the automated process. The string "&delete=1" is an optional parameter for users wishing to first retrieve and then delete files and may be utilized through the following URL:

https://dss.nyiso.com/dss/docViewAGN.jsp?RepoType=I&ID=XXXX&DocName=XXXXXXXX&entry=&DocType=csv&delete=1

All users should note that subsequent to retrieving files, they must log-out of the automated environment with the following URL:

https://dss.nyiso.com/dss/scripts/dssADDAutomationLogout.jsp

Option B – HTML Source Code for the ADD "Retrieve Files" Page

This option redirects the automated process to the "Retrieve File" page (Figure 5) and may be accessed through the following URL:

https://dss.nyiso.com/dss/login.jsp?user=****&pass=****&automated=1

Again, MPs should use their actual DSS userid and password in the place of user=****&pass=****.

After successful authentication, the above URL will return the html source code for the Retrieve Files Page. This contains all of the information needed to retrieve the csv file content – particularly the Document Name, and Document ID for each file.

Individual file content may be retrieved by parsing the Document Names and Document Ids from the html source code and substituting the names and IDs into the following URL:

https://dss.nyiso.com/dss/docViewAGN.jsp?RepoType=I&ID=XXXX&DocName=XXXXXXXX&entry=&DocType=csv

Market Participants with any questions regarding customer settlement files availability through the DSS ADD should contact NYISO Stakeholder Services via telephone at (518) 356-6060 or via email at stakeholder_services@nyiso.com

Attachment 1:

Description of Application Program Access

In addition to options A and B that rely on using a web browser to access the DSS ADD, Market Participants may programmatically access the DSS ADD Retrieve File interface. To do so, the application will need to issue a 'GET' or 'POST' HTTP request to the upload/download program at the following URL:

https://dss.nyiso.com/dss/login.jsp?user=XXXX&pass=XXXX&automated=2

Use of the 'POST' request method is recommended to avoid the limitations on content length that occur with the 'GET' request. Use of uppercase in the request verb is also recommended.

Since access to the DSS ADD program requires authentication via the use of digital certificates, an application program may need to handle the exchange of web server and client certificates that occurs as part of the handshake before an SSL connection is established. Use of a particular certificate store or client certificate may also require special processing.

For a Windows client, a possible implementation of a client application can be done using Microsoft Windows HTTP Services (WinHTTP). An example script, which has been tested on Windows 2000, is provided below in Microsoft Jscript using the WinHTTPRequest COM object. (This script is provided for example purposes, only, and the NYISO makes no express or implied representation or warranty as to its accuracy or completeness, or its fitness for a particular purpose.)

```
// Load the WinHttpRequest object.
var WinHttpReq = new ActiveXObject("WinHttp.WinHttpRequest.5");
var fs = new ActiveXObject("Scripting.FileSystemObject");

function writeFile(strFileName, strFileData) {
   if ((strFileData.length > 10) && (strFileName.length > 3)) {
        var TestFile = fs.CreateTextFile("C:\\temp\\ADD\\" + strFileName + ".csv", true);
        TestFile.WriteLine(strFileData);
        TestFile.Close();
   }
}

function getWeb(strUser, strPass, strTargetURL) {

 // HttpRequest SetCredentials flags.
 HTTPREQUEST_SETCREDENTIALS_FOR_SERVER = 0;
 HTTPREQUEST_SETCREDENTIALS_FOR_PROXY = 1;

 WinHttpReq.open( "POST", strTargetURL, false );

 var Done = false;
 var Attempts = 0;
 do

 {
  // Keep track of the number of request attempts.
  Attempts++;
```

```
  // Send a request to the server and wait for a response.
  WinHttpReq.send();

  // Obtain the status code from the response.
  var Status = WinHttpReq.Status;

  switch (Status)
  {
    // A 200 status indicates that the resource was retrieved.
    case 200:
      Done = true;
      break;

    // A 401 status indicates that the server requires authentication.
    case 401:
      WScript.Echo( "Requires Server UserName and Password." );

      // Specify the target resource.
      WinHttpReq.open( "GET", strTargetURL, false );

      // Set credentials for the server.
      WinHttpReq.SetCredentials( strUser, strPass, HTTPREQUEST_SETCREDENTIALS_FOR_SERVER );
      break;

    // A 407 status indicates that the proxy requires authentication.
    case 407:
      WScript.Echo( "Requires Proxy UserName and Password." );

      // Specify the target resource.
      WinHttpReq.open( "GET", strTargetURL, false );

      // Set credentials for the proxy.
      WinHttpReq.SetCredentials( strUser, strPass, HTTPREQUEST_SETCREDENTIALS_FOR_PROXY );
      break;
  }
} while( ( !Done ) && ( Attempts < 3 ) );

var strResult;

//  Retrieve the response text.
strResult = WinHttpReq.ResponseText;

return(strResult);

}

function getCSVFile() {

  var args = WScript.Arguments;
  strUser = args.Item(0);
```

```
    strPass = args.Item(1);

    var targURL = "https://dss.nyiso.com/dss/login.jsp?user=" + strUser + "&pass=" + strPass +
"&automated=2";

    var strResult;
    strResult = getWeb(strUser,strPass,targURL);
    writeFile("log_file",strResult);

    if (strResult.length < 12){
            WScript.Echo ("There are no files to download");
    }
    else {
            WScript.Echo( strResult );
    }

    var strFileName;
    var strOrgID;
    var intCommaLoc= -1 ;
    var intStrLen = -1;
    var strFileResult;
    var strTargURL;
    var intIndex = 0;

    intLineLoc = strResult.indexOf("\n",1);
    intStrLen = strResult.length;

    intLineLoc = strResult.indexOf("\n",1);
    do {
            strFileName = strResult.substring(0,intLineLoc-11);
            strResult = strResult.substring(intLineLoc+1, strResult.length)
            intLineLoc = strResult.indexOf("\n", 0);

            WScript.Echo(strFileName);

            strOrgID = strFileName.substring(0,strFileName.indexOf(",",0));
            strFileName = strFileName.substring(strFileName.indexOf(",",0)+1,strFileName.length);

            WScript.Echo((strOrgID + "--" + strFileName));

            strTargURL = "https://dss.nyiso.com/dss/docViewAGN.jsp?RepoType=I&ID=" + strOrgID +
"&DocName=" + strFileName + "&entry=&DocType=csv&file=file.csv"
            strTargURL = getWeb(strUser,strPass,strTargURL);
            writeFile(strFileName,strTargURL);

            //WScript.Echo(strTargURL);
            intIndex++;
    } while ((intLineLoc != -1) && (intIndex < 200)) ;

    WScript.Echo("Number of files = ...");
    WScript.Echo(intIndex);
```

```
};
```

getCSVFile ( );

For more information on the HTTP 1.1 request/response protocol, please refer to the RFC 2616 protocol. For more information on WinHTTP or Visual Basic Script, please refer to the Microsoft MSDN site.

You can also find more info on using the WinHttpRequest COM object with Visual Basic or with script languages at http://msdn.microsoft.com/library/default.asp?url=/library/en-us/winhttp/http/winhttprequest.asp. (Note: in order to run the above example script, you might need to install winhttp50sdk.exe)

WinHttp comes in two versions. The latest version is 5.1 and is an operating system component in Windows XP SP1 and Windows 2000 Professional SP3. The dynamic library for this version is winhttp.dll. The older version of WinHttp is 5.0 and is available for Windows 2000 or Windows NT 4.0 (with Internet Explorer 5.01). The dynamic library is winhttp5.dll. The example in this attachment uses version 5.0. When the object reference was changed to version 5.1, the example ran with no other modifications. However, version 5.0 of WinHttp is no longer available for download and will not be supported after October 1, 2004.

This is just one way of writing an automated program for DSS ADD automation. There are other methods that can rely on other Windows functions or work on non-Windows machines.

This Technical Bulletin is not currently expected to be incorporated into a NYISO Manual/User Guide.