Organizations submitting programs to NETA must have an understanding of the technical specifications set forth in this document and proficiency at using professional digital measurement equipment. It is recommended that first time submitters submit test files for approval. Recommended test file lengths should be no less than 2 minutes and no more than 10 minutes.

Producer Responsibilities |

Evaluate the program to meet these specifications prior to submission and submit 'Broadcast Ready Evaluation Form.' Program submissions not meeting these specifications may be rejected resulting in delay in processing and potential fees for correcting files.

File Delivery |

File Based Media delivered via NETA FTP site. Login credentials will be provided.
- XDCamHD MXF OP1a
- DNxHD 145, 220 or 220x OP1a file
- Quicktime Files

File Nomenclature | Files will be named using the NOLA CODE provided.

Acceptable File Formats |

Preferrerd

XDCamHD MXF OP1a	MPEG2-Long Gop MXF OP1a/ AS02	Quicktime Files
DNx145, DNx220 or DNx220x files must meet file specifications including File Container: MXF OP1a	File must include File Container: MXF OP1a	File Container: Quicktime
Video	**Video**	**Video**
• 1920x1080i • 29.97 fps • 4:2:2 • MPEG-2 Long GOP @ 50 Mbps	• 1920x1080i • 29.97 fps • 4:2:2 • MPEG-2 Long GOP @ 50 Mbps • Field Order: Upper field first (TFF)	• 1920x1080i • 29.97 fps • 4:2:2 • XDCAM HD, ProRes SD(145 Mbps), or ProRes HQ (220 Mbps) • Field Order: Upper field first (TFF)
Audio	**Audio**	**Audio**
• 8 channels • 24 Bit • 48 KHz sampling rate • 1152 kbps Bitrate	• 8 channels • 24 Bit • 48 KHz sampling rate • 1152 kbps Bitrate	• 8 channels • 24 Bit • 48 KHz sampling rate • 1152 kbps Bitrate
Ancillary Data	**Ancillary Data**	**Ancillary Data**
• 436M 708 captions with 608 compatibility bytes • Timecode track • Drop frame timecode	• 436M 708 captions with 608 compatibility bytes • Timecode track • Drop frame timecode	
Timecode Track		

File Contents |
Files should have one frame of black at beginning and end and fade up to show content.

Do not include bars and tone.

Files will contain a time code track that provides continuous, sequential timecode from start to end of file. Time-code should start at 01:00:00;00.

See NETA Perfect Program Packaging

Main Service Audio |
Main service audio is defined as the primary service that is intended to serve the majority of the audience. All Main Service Audio shall be stereo or 5.1 surround sound. Legacy material may contain mono audio if it was not originally captured in stereo. Only stereo will be accepted for promos and interstitials.

Secondary Service Audio |
Secondary services include alternate languages and/or Descriptive Video Information (DVI).

- Audio Essence: PCM Uncompressed
- Audio Format: 48 kHz uncompressed WAV or AIFF.
- Reference Tone: -20dBfs
- Peak audio program levels at -12 to -8 dBfs, nominal peak levels −10dBfs, average audio
- levels should be around -20 dBfs.
- Nominal Loudness level: -24 LKFS plus or minus 2 dB.
    - Loudness is measured using ITU BS.1770-3 weighting for the duration of the show.

File Audio |
Files will have audio configured in one of the following:

Surround Sound Track Assignment	
Channel/Track	Assignment
Channel 1	Left Front (L)
Channel 2	Right Front (R)
Channel 3	Center (C)
Channel 4	Low Frequency Effect
Channel 5	Left Surround (Ls)
Channel 6	Right Surround (Rs)
Channel 7	Mono Mix or DVI
Channel 8	Mono Mix or SAP (Secondary language)

Stereo (4 or 8 Channels)	
Channel/Track	Assignment
Channel 1	Left
Channel 2	Right
Channel 3	Silence
Channel 4	Silence
Channel 5	Silence
Channel 6	Silence
Channel 7	Mono Mix or DVI
Channel 8	Mono Mix or SAP (Secondary language)

Video Conversion |

This specification requires Y' Cr' Cb' digital component submissions. Producers should be aware that 75% of Y' Cr' Cb' values do not exist in RGB color space and will be clipped by downstream consumer equipment before display.

Color Gamut |

To ensure the consumer display is faithful to the submission, Y' Cr' Cb' values must fall within the equivalent RGB colorspace.

Producers should be aware that the RGB gamut will be hard limited when the final PBS package is created for distribution.

Measurement Method	Valid Y & RGB Range
8 bit Digital	16-235
IRE	0-100
Analog Equivalent	0-700 mV

Black Level |

■ Objectionable white or black clipping must not be evident.

■ Program black level **MUST** be set to **0v** on the Y' waveform.

Closed Captioning |

■ All media must have accompanying captions on SDID 01 for CEA708 and DID 61, SDID 02 for compatibility bytes or a .scc or SMPTE Timed Text xml caption file.

■ The caption file should include an EDM (Erase Displayed Memory command), also known as a clear pulse, at the first frame matching video and also at the beginning and end of each container. Captioning must accompany file submissions.

■ SMPTE Timed Text Captions ST 2052-1:2010 - Timed Text Format

■ The caption file filename must exactly match the video file filename.

■ **The timecodes for the video file and the SCC file MUST match**. Please double-check before submitting.

Subtitles |

Subtitles are limited to the Safe Title Area of 16X9 or 90% of the width and height

Questions | Contact Greg Tillou, Senior Operations Director at greg@netaonline.org

Appendix - Common Problems |

As you prepare your content for delivery, please check for these common problems:

Video Levels

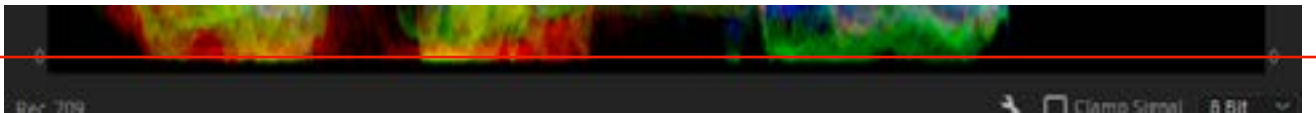**Make sure your video levels do not exceed 100 IRE or fall below 0 IRE**

This video goes over 100 IRE at the top of the scope and is **non-compliant:**

This video is below 100 IRE and is **compliant:**

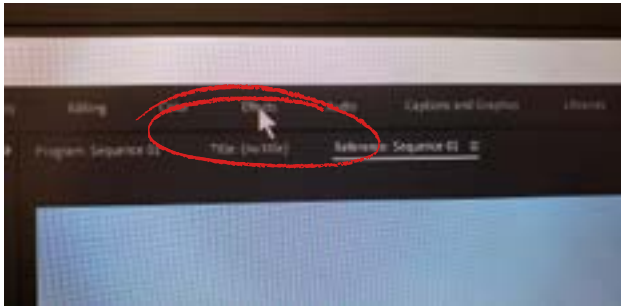This video drops below 0 IRE at the bottom of the scope and is **non-compliant:**

This video is above 0 IRE and is **compliant:**

TIPS FOR FIXING YOUR LEVELS

What happens when you submit your program and our uplink site says that your levels exceed 100 IRE or fall below 0 IRE? Our recommendation for fixing in Premiere Pro

Levels exceed 100 IRE

Click on Effects

Click on Video Effects
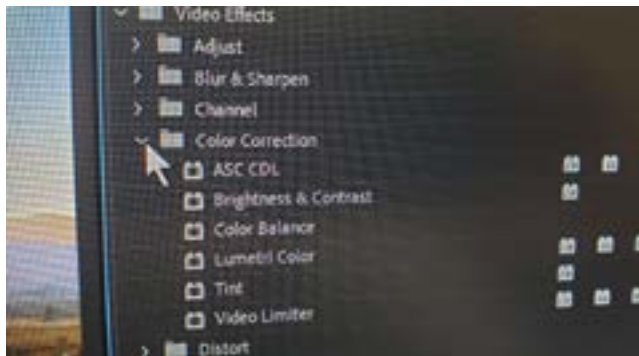
Click on Color Correction, then Video Limiter
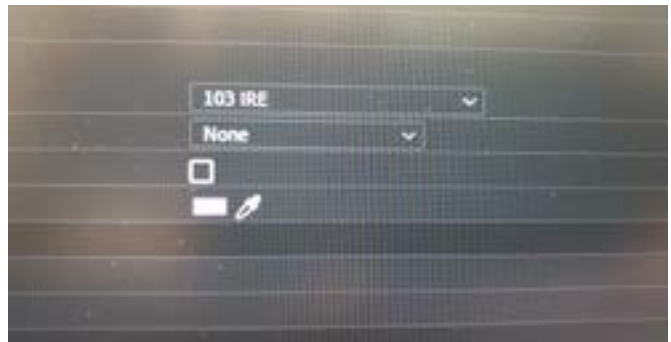
You are probably going to see that the video has defaulted to 103 IRE. Click on the drop-down menu.
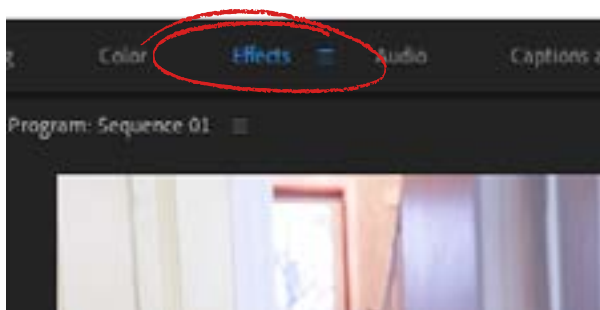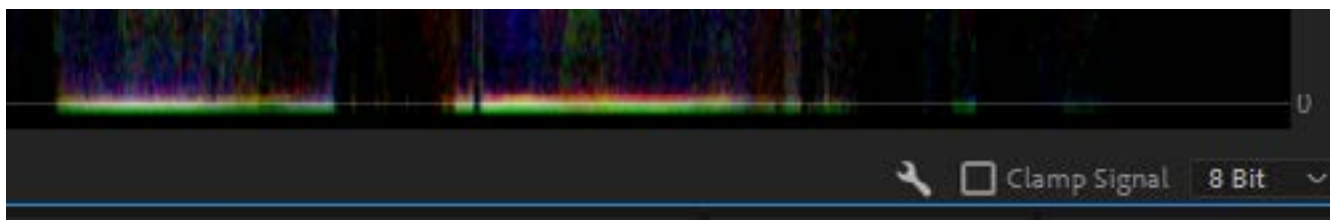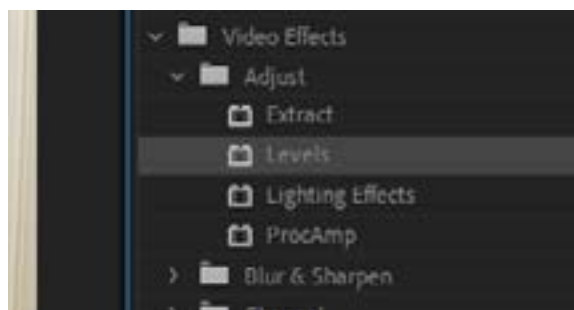

Select 100 IRE (SMPTE range)
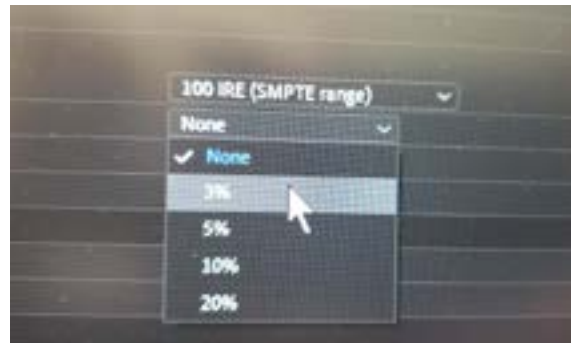
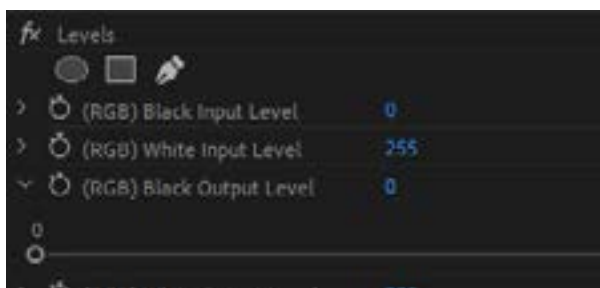To buy a little extra padding, click on the next drop-down menu and change it from 0 to 3%

Levels fall below 0 IRE

There are probably a lot of ways to adjust the bottom.
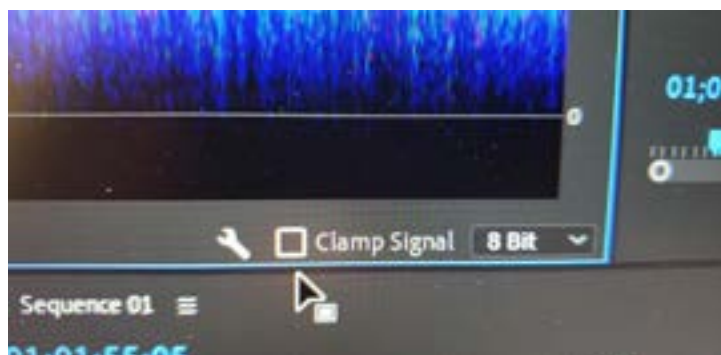

Click on Video Effects, then Adjust, then Levels

Slide the dot on the bar until the reading is at 5

Click on the arrow next to RGB Black Output Level.
A horizontal slider bar should appear below it.

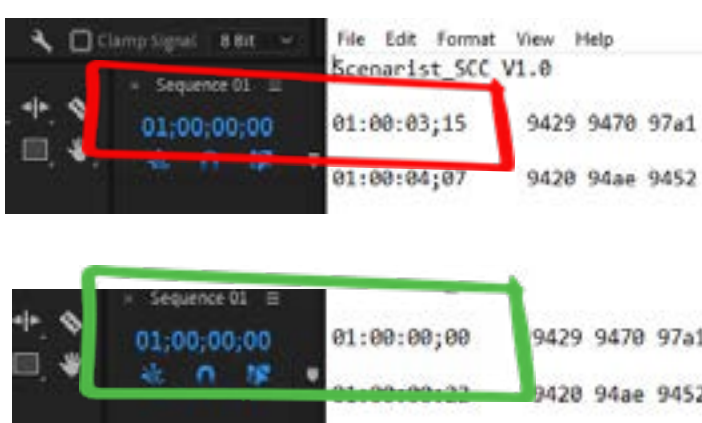Check your scope – this should bring the video above 0 IRE. If it does not, adjust the bar a little higher.

I'll share one other hard-knocks lesson that you may already know: At the bottom of the waveform scope, there is a little check box called Clamp Signal. Make sure this is NOT checked. Otherwise, the scope will artificially make your levels look like they are within parameters when they are really not.

Closed Captioning

If delivering closed-captions as a separate .scc file:
- Make sure the time code on the .scc file start time matches the start time code of your video file.
- If the two files do not start with the same time code, they will not align and the captions will not be in sync with the audio.
- This will make the closed captions non-compliant with current FCC guidelines.

The start time of this .scc file is different than the time code on the video file.

When these files are put together, the captions will not be in sync with the audio:

The start time of this .scc file is the same as the time code on the video file.

When these files are put together, the captions should be in sync with the audio.

Make sure the closed captions do not cover up graphics (name keys, text on screen), faces or important action. This ensures compliance with current FCC guidelines.

This caption covers up a name key and is **non-compliant** with current FCC guidelines.

The caption covers a face and is **non-compliant** with current FCC guidelines.

Moving the caption to the top of the screen for the duration of the lower third will make it **compliant** with current FCC guidelines.