

## CHAPTER 28 – ACTIVATING/DEACTIVATING A SIGNAL

### ACTIVATING/DEACTIVATING A SIGNAL

Activating a traffic control signal requires careful planning and coordination between the project engineer, the contractor and the district traffic office. Cooperation between these three groups is essential to ensure a safe and efficient activation of the traffic control signal.



Figure 28-1: Signal Switch

### 28.1 Activating Guidelines

The guidelines presented below should be followed in order to ensure a safe and efficient activation procedure.

#### 28.1.1 FUNCTIONAL TEST

Prior to activating the signal, the contractor shall make a functional test to demonstrate to the engineer that each and every component part of the traffic control signal functions as intended. The traffic control signal shall not be placed in operation until all the required field tests have been completed and accepted.



Figure 28-2: Functional Test

#### 28.1.2 TURN-ON PROCEDURE

Traffic control signal system turn-on should not be scheduled on Fridays or before a holiday because of possible malfunction of the new traffic control signal.

Prior to activating a traffic control signal system, the contractor shall notify the engineer a minimum of 48 hours before the scheduled traffic control signal activation (Standard Specification 2565.3AA). The traffic control signal system cannot be put in flash or made operational unless authorized by and in the presence of the engineer.



Figure 28-3: Bagged Signals

Prior to activating the traffic control signal system, the contractor shall remove the bags from all the signal indications.

MnDOT personnel shall place the traffic control signal system into operation unless otherwise authorized by the engineer.

The contractor shall aim the vehicle and pedestrian signal heads as directed by the engineer.

All appropriate signs shall be installed. Conflicting signs (for example, stop signs) shall be covered or removed.



Figure 28-4: MnDOT Personnel

Although the engineer is responsible for the following work, it is often done by district traffic office representatives.

- The Minnesota Manual of Uniform Traffic Control Devices (MnMUTCD) 4D.31 requires the traffic control signal be brought out of flash in a precise and consistent manner. It requires the signal to have an all red time and then the major street shall have a green interval. It is required that this procedure for taking a traffic control signal out of all red flash is followed.



Figure 28-5: Traffic Control Signal

- Stop traffic flow from all approaches (with the help of the contractor).
- Turn the traffic control signal system on. Allow traffic on the major approach to go, hold the traffic on the minor approaches until they get a green light. Note the time so that it can be entered in the log book and included in the official turn-on letter.



Figure 28-6: Stop Traffic Flow

- Wait for the signal indications of the major street to turn red and their traffic to stop. Do not allow cross street traffic to move until they get a green light.

- Check that all vehicle indications are working properly through several cycles.

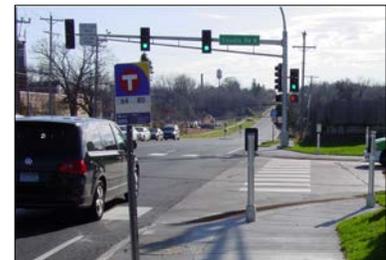


Figure 28-7: Wait for Major Street Traffic

- Check that all pedestrian push buttons and indications are working properly.

- Observe all the phases in a cycle to ensure that each phase has the correct timing.

- When a signal is turned on, district traffic office personnel will observe its operation in the A.M. and P.M. peak periods as well as off peak operation. This will continue until they are satisfied with the operation.



Figure 28-8: Pedestrian Push Button Check

The following personnel should be present when a traffic control signal system is activated:

- Project engineer (or their representative)
- Contractor (with the appropriate equipment and personnel)
- City police (if necessary)
- MnDOT’s Electrical Services Section personnel (if necessary)
- District traffic engineer (or representative)

Please note that MnDOT personnel may choose to operate the new traffic control signal system in a “flashing” mode for a few days before turning the traffic control signal system to normal operation. This is not done in all MnDOT districts.

The MnDOT Standard Specifications for Construction (Spec Book) defines “TURN-ON” date as the time when the complete traffic control signal and lighting system meets all installation and operational requirements of the contract and is placed in automatic operation.

### 28.1.3 TURN-ON LETTER

After a traffic control signal system is activated, the district traffic office is responsible for sending a memorandum of notification (turn-on letter) to each of the following:

- City
- County
- Power Company
- State Patrol
- Project engineer
- Emergency Operations Officer, MnDOT Truck Center
- Electrical Services Section
- Office of Traffic Engineering (CO Traffic)

The memorandum should include the following:

- State Project Number
- Intersection ID number
- Location of the signal
- Date and time of signal activation
- A listing of maintenance responsibilities (who is responsible for what)
- Name of the power company
- Name of the project engineer
- Meter address
- Dates of warranties affecting the signal
- Vertical clearances of any objects suspended over the roadway

<b>DATE:</b>		
<b>TO:</b>	Addressees	
<b>FROM:</b>		
<b>PHONE:</b>		
<b>SUBJECT:</b> SIGNAL TURN-ON		
<b>LOCATION:</b>	T.H. at System I.D.: #	S.P.:# T.E. :#
<b>TURN-ON DATE</b>		
Signal placed in flash Date:		
Automatic in operation Date:		
Luminaire turn on Date: (No.) , 250 watt H.P.S.		
Date Old System Turned Off:		
<b>AGREEMENTS</b>		
In force: # E.V.P.: #		
Warranty Period Begins: Ends:		
<b>OPERATION NOTES</b>		
Operation Type: Controller Type: Indication Type:		
Preemption Type:		
<b>MAINTENANCE RESPONSIBILITY</b>		
Effective Date:	Relamp Signal Maintenance:	Meter Address:
Cabinet:	Luminaire Maintenance:	District Priority Code:
E.V.P.:	Cleaning & Painting:	Phone Line to Cabinet(V/N):
Hardware:	Power: Signal:	Power: Luminaires:
Interconnect:	Rail Road Preemption:	Rail Road Co.:
Knockdown:	Phone Co.:	Phone Drop Address:
Special Note:		
SM = State Maintenance	CM = County Maintenance	MM = City Maintenance
CO = Contractor Maintenance	RC = County Reimburses State	RM = City Reimburses State
PM = Payable - State Pays City	UT = Utility Maintenance	PC = Payable - State Pays County
NA = Not Applicable	OT = Other Maintenance	RO = Other Reimburses State
<b>ADDRESSEES</b>		
City:	State Patrol:	
County:	Power Company:	
Signal Design:	Project Engineer:	
Traffic Engineering C.O.:	Traffic Studies:	
* District Permits Office:	District Control Section File:	
* Electrical Services Section:	*Signal Operation File:	
*Admin. Truck Center/Permits: Mendota Heights:		Version 10-23-01
*Overhead Clearance - See Attachment		

Figure 28-9: Turn-On Letter

## 28.2 Deactivating Guidelines

Prior to turning a traffic control signal system off, the contractor shall notify the engineer within a timeframe as specified in the contract. The traffic control signal system cannot be put in flash or deactivated except by the MnDOT personnel, unless authorized by, and in the presence of the engineer.

### 28.2.1 TURN-OFF PROCEDURE

Turning a traffic control signal system off should be conducted with the same care and planning used for a turn-on. The following procedure should be followed:

- Make sure that no pedestrians or vehicles are in the intersection.
- Wait until the major street traffic is stopped by a red light. Wait until the minor street indications change from yellow to red then place the intersection in flash when traffic on the minor street permits.
- Make sure all the appropriate signing is in-place before the traffic control signal system is turned off.
- The traffic control signal system shall be put into flashing operation.
- Turn the traffic control signal system off and record the time in the log book.
- Turn the power from the service equipment off.



Figure 28-10: Clear Intersection



Figure 28-11: Signal Switch



Figure 28-12: Power Switch

## 28.3 Signal Removal and Salvage Guidelines

The person responsible for removing the equipment shall, using tape and a water proof marker, label all the control equipment with the date, time and intersection location. Using the same method, label the electric meter.

Secure all the connectors and electronic equipment that is not being removed with tape or nylon tie wraps.



Figure 28-13: Label Equipment

Remove the controller from the cabinet and place it in a location to prevent damage during transport.

If the cabinet is to be removed from its foundation, it shall be lifted using the holes near the roof of the shell (or the lifting ears). The cabinet shall be transported in an upright position and protected from dents and scratches. Place the removed cabinet on the pallet the new cabinet was delivered on if available.



Figure 28-14: Secure Connectors

When battery backup service cabinets including type SSB are to be removed and salvaged, the batteries (if installed) must be removed from the cabinet prior to lifting the cabinet off the pad.

The batteries must be shipped separately from the cabinet.

The contractor shall transport all salvaged equipment to the locations specified in the contract.

After a traffic control signal system is deactivated, the district traffic office is responsible for sending a memorandum of notification (turn-off letter) to the same people as the turn-on letter.



Figure 28-15: Battery Removal

## 28.4 Chapter 28 Resources

- Minnesota Manual of Uniform Traffic Control Devices 4D.31
- Traffic Engineering Manual (TEM)
- MnDOT Standard Specifications for Construction

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